

The Commonwealth of Massachusetts



REPORT

OF THE

COMMISSION TO CONSIDER THE IMPROVEMENT OF TRANS- PORTATION FACILITIES IN THE COMMONWEALTH

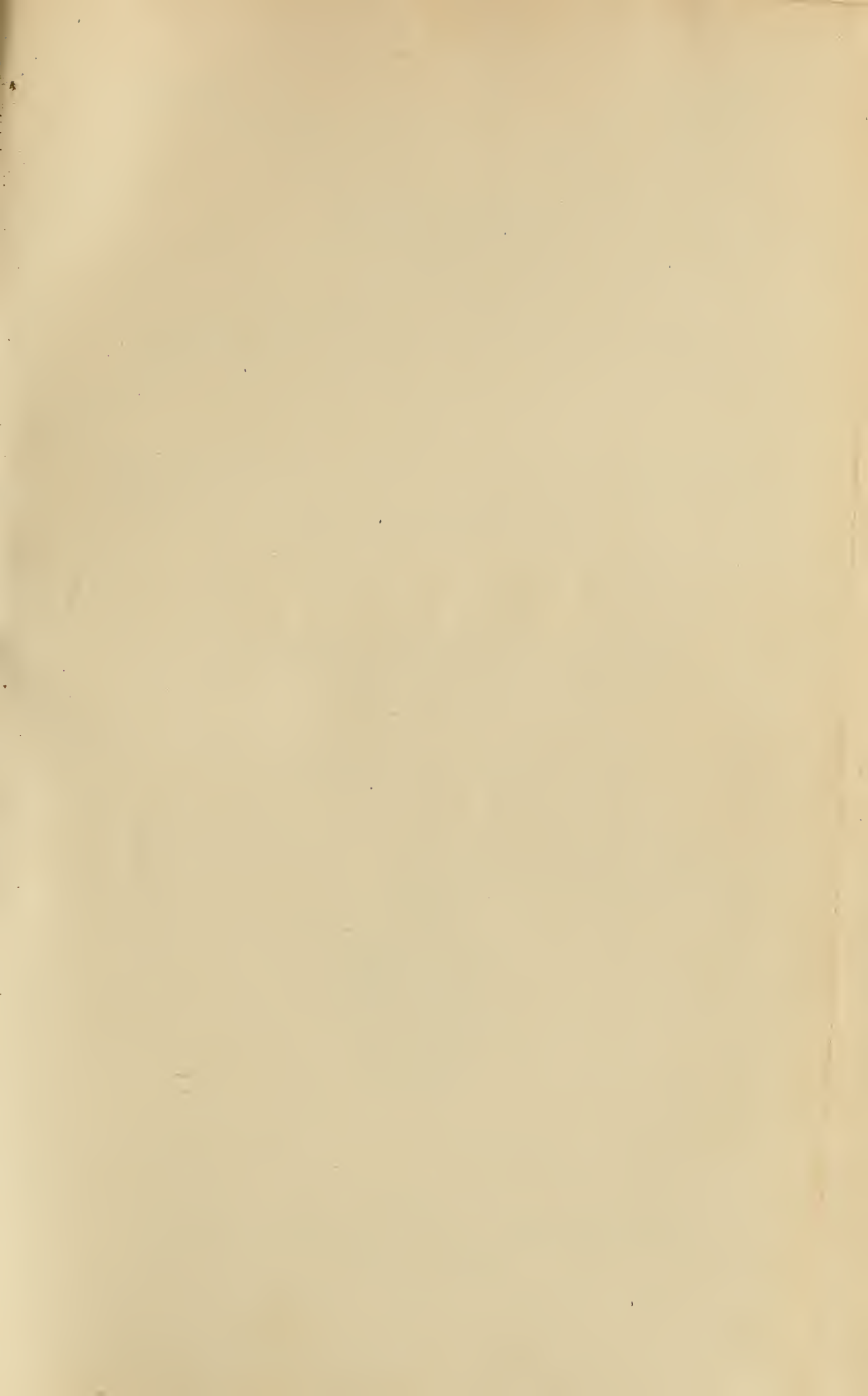
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REPORT

OF THE

COMMISSION TO CONSIDER THE IMPROVEMENT

OF

TRANSPORTATION FACILITIES IN THE COMMONWEALTH

AND ESPECIALLY IN THE

FIVE WESTERN COUNTIES THEREOF.

JANUARY, 1915.

Compendium of

Western Massachusetts
Transportation Commission.



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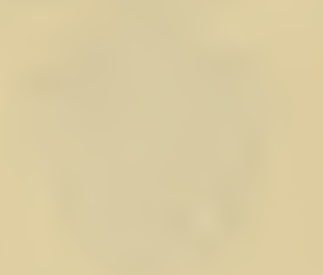
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The Commonwealth of Massachusetts.

AUTHORIZATION OF COMMISSION.

RESOLVES OF 1914, CHAPTER 146.

RESOLVE TO PROVIDE FOR THE APPOINTMENT OF A COMMISSION TO CONSIDER THE IMPROVEMENT OF TRANSPORTATION FACILITIES IN THE COMMONWEALTH, AND ESPECIALLY IN THE FIVE WESTERN COUNTIES THEREOF.

Resolved, That the governor, with the advice and consent of the council, shall, within thirty days after the passage of this resolve, appoint five persons, citizens of the commonwealth, one of whom shall be designated as chairman, as commission to investigate and consider further the subjects as considered by the special legislative committee whose report is contained in senate document No. 300 of the year nineteen hundred and thirteen; and also to consider generally the needs, possibilities, and probable benefits, both to the commonwealth and to the five western counties thereof, of a development and extension of transportation facilities, and of a utilization of the agricultural, dairy and stock-raising opportunities of said counties; and to study the causes and remedies for the diminution of population and the decline of industries and agriculture therein; the best method of securing the necessary transportation facilities, including the feasibility and probable cost of construction by the commonwealth of, and the best kind of construction and most practicable and useful routes for, a system of railroads, street and electric railways or state highways to serve, and to promote the development of, said counties; the advantages and defects of the operation of such a transportation system either by agents of the commonwealth itself, or by leases to, or operating agreements with, existing railroad corporations or street railway companies, or otherwise; the desirability and feasibility of securing the construction of such a system of transportation by existing transportation companies through financial aid from the commonwealth by subscriptions to stocks, purchase of bonds, direct loans, or guaranty of stock or bonds, or otherwise; and the expediency, either as a part or independently of the introduction of such transportation system, of a state plan of agricultural credit, under proper safeguards, to present or prospective inhabitants engaged in agriculture or stock-raising.

The commission shall consult with officers and representatives of the United States Department of Agriculture as to the agricultural possibilities of the five western counties, and with the United States Department of Justice as to the legality of the different plans considered by the commission for the development of the said section and as to the views of said department with respect to the adoption by this commonwealth of any particular policy of legislation which the commission may be disposed to recommend in regard to any of said matters and also in regard to the sale or disposition of any stock of the Berkshire Street Railway Company acquired by the New York, New Haven and Hartford Railroad Company under authority of chapter six hundred and one of the acts of the year nineteen hundred and ten. The commission shall also confer informally with the chief executives, public service commissions, boards of agriculture and similar bodies and officials of the neighboring states of New York, Connecticut, Vermont and New Hampshire, if the commission deems such conference advisable, as to the possible development, in co-operation or in harmony with the said states or any of them, of territory of this commonwealth and contiguous territory in any of the said states. The commission shall give public hearings, and shall report its conclusions and recommendations to the general court on or before January fifteenth, nineteen hundred and fifteen, with drafts of such bills, if any, as it may deem expedient.

The commission shall have authority to administer oaths, and to require the attendance of witnesses and the production of documents, and shall receive such compensation and may incur such expenses as may be approved by the governor and council. For the purposes of this resolve, including the compensation of the members of the commission, there may be expended from the treasury of the commonwealth a sum not exceeding ten thousand dollars. The commission shall not incur any liability or make any expenditure exceeding one hundred dollars, without the previous approval of the governor and council. The provisions of section twenty-one of chapter three of the Revised Laws shall not apply to appointments made hereunder. [*Approved July 2, 1914.*]

APPOINTMENT OF COMMISSION.

In accordance with the provisions of above order His Excellency Governor David I. Walsh, with the advice and consent of the Council, appointed as members of this commission: Louis C. Hyde, chairman, William G. McKechnie, Richard J. Talbot and Samuel D. Sherwood of Springfield, Henry J. Ryan of Pittsfield.

The commission elected Richard J. Talbot, secretary, and Thomas J. Collins of Springfield, clerk.

ACKNOWLEDGMENTS.

The commission desires to express its appreciation of the services of its clerk, Thomas J. Collins, Esq., whose able and efficient work in the investigations of the commission, and as its statistician, has been of great value.

The commission is also indebted to the selectmen of the several townships of the five western counties for their careful consideration and prompt return of its questionnaire, and to the State Highway Department of the several States of the Union for information similarly obtained, as to the methods employed in solving their problem of road construction and maintenance.

Both collections of questionnaires have been filed with the Massachusetts Highway Commission for reference.

The Commonwealth of Massachusetts.

BOSTON, Jan. 7, 1915.

To the Honorable Senate and House of Representatives.

In accordance with the provisions of the order of the General Court, adopted on July 2, 1914, we have the honor to submit the following report.

Respectfully,

LOUIS C. HYDE, *Chairman.*

RICHARD J. TALBOT, *Secretary.*

WILLIAM G. McKECHNIE.

SAMUEL D. SHERWOOD.

HENRY J. RYAN.

THOMAS J. COLLINS,

Clerk.

REPORT OF THE COMMISSION TO CONSIDER THE IMPROVEMENT OF TRANSPORTA- TION FACILITIES IN THE COMMON- WEALTH.

SYNOPSIS OF WORK OF THE COMMISSION.

Preliminary to the investigation of the several subjects assigned for its consideration, the commission availed itself of the valuable information contained in the report made in 1913 (Senate, No. 300) by the joint committee of the General Court appointed to consider the extension of the trolley systems of the Commonwealth.

The commission then proceeded to obtain a comprehensive knowledge of the towns and highways of the five western counties by personal observation. This was done during the months of October and November by automobile trips over more than a thousand miles of the roads of western Massachusetts and by personal inquiry. Hearings were given to all the towns in the five counties to obtain the views of the inhabitants as to present conditions, possibilities and transportation needs. Government officials — State and national — and representatives of educational institutions, particularly the colleges and universities of the State, were consulted. The opinions of experts in banking, agriculture and road building on the causes of decline and the ways and means of reviving and increasing the prosperity of the rural communities were obtained. The members of the State Highway Commission and the members of the Public Service Commission have placed this commission in possession of all the facts and figures at their command. We are indebted to them for the assistance afforded us. We are also indebted to the officials of the street railway systems serving the territory under consideration.

The commission availed itself of the statistics collected and reported by the joint committee of 1913, the State Highway

and Public Service commissions, and has adopted some of them as part of its own report. These served for the discussion of trolley extensions, and serve equally well for the several problems submitted to this commission.

The five western counties, viz., Berkshire, Franklin, Hampshire, Hampden and Worcester, have an area of 4,450 square miles, which is more than one-half of the entire area (8,177 square miles) of the Commonwealth. These five counties had, according to the census of 1910, a population of 843,212; the population of the whole Commonwealth was 3,366,416. These five western counties have 54.4 per cent. of the area, and had in 1910 only 25.04 per cent. of the population of the State. Their density of population was then but 189.48 persons per square mile, while the density of the rest of the State is 677 persons per square mile.

On the mainland of Massachusetts there are 36 towns without either steam railroad or trolley transportation facilities of any kind. Thirty-three of these towns are situated in the five western counties; their area aggregating 933 square miles. For comparison there is annexed to this report a list of all the towns in the five counties, with the population of each according to the census of 1820, prior to the introduction of railways, and also the census of 1910, together with an estimate of the population for 1914, reported by the selectmen of the several towns (Appendices E and J).

The extent of the present railway development in the five western counties may be ascertained by reference to the State railway map.

The two great sections of western Massachusetts entirely devoid of railways, steam or electric, are, first, the area bounded east by the Connecticut valley, west by the Pittsfield and North Adams Railroad, north by the Fitchburg Railroad, and south by the Boston & Albany Railroad. It includes the towns of Savoy, Windsor, Peru, Hawley, Plainfield, Cummington, Goshen, Worthington, Chesterfield and Westhampton, and represents an area of about 325 square miles. The second section includes the towns of Tyringham, Monterey, New Marlborough, Otis, Sandisfield, Blandford, Tolland, and Granville, aggregating 316 square miles, and bounded east by the valley

of the Connecticut, west by the Housatonic valley, north by the Boston & Albany Railroad, and south by the State of Connecticut. Neither of these sections has railway or trolley facilities of any kind, although the Lee-Huntington extension of the Berkshire Street Railway, passing through a corner of Otis and a corner of Blandford, has been built from Lee to Huntington. This road, however, is not in operation, nor has it been connected up with the Springfield Street Railway at Huntington. However, State highways are being built through both these sections as fast as the appropriations will allow, and the town roads are being slowly improved under the small towns act. This commission noted that even in this day of improved roads, automobiles, telephones and rural free delivery, the facilities for the transportation of persons and commodities, and the communication of intelligence, are somewhat, but not sufficiently, improved over what they were fifty years ago.

All of these towns are hill towns in the strictest sense of the word. Situated at an elevation of 1000 to 1,700 feet, they are deeply seamed by valleys, through which such streams as the Farmington, the Westfield and the Hubbard rivers flow in rapid and abrupt descent. These streams, under proper development, by means of heavy dams and extensive conservation reservoirs, could undoubtedly be made to furnish a large amount of power for manufacturing, electric lighting, and the running of trolley cars. It is the opinion of this commission — an opinion supported by the experience of numerous large water-power companies throughout the United States and the Dominion of Canada — that this power could be more economically and profitably utilized if transmitted by high tension electric lines to large industrial centers advantageously located on or near lines of steam railways, than by attempting to use it at its source for operating small manufacturing enterprises or power plants that are necessarily remote from such transportation. In this day and generation small manufacturing plants cannot successfully compete with large corporations.

The suggestion that the power generated along these streams could be used to propel freight and passenger cars over the trolley roads asked for is subject to objection. Its weakness is that the peak load of passenger and freight traffic over those

roads would be at its maximum during the summer months, — a portion of the year when the water furnished by those streams is at its minimum. For the last year or two it has almost entirely failed, and consequently would be insufficient for permanent and satisfactory power. There would be no other alternative than to install auxiliary steam power plants, thus adding to the expense of operation in an almost prohibitory way.

It was contemplated by the Legislature that this commission should investigate the reasons for the decline in population of towns in the western counties.

The extended trips of the commission through the more remote rural districts of the five counties, and a comparative study of the census, confirm the conclusions of the joint committee and the claims of the residents of those districts that the hill towns, and indeed many other of the smaller towns of western Massachusetts, have shown a marked decrease, both in population and agricultural activity and productivity. The commission noted in much of the territory traversed decadent farms, unpruned and neglected orchards, untenanted houses, and fields given over to brambles and an invading forest growth, — fields that not so long ago were fertile meadows and good grazing land. Such evidence of deterioration is not to be disputed, and the great question is, can the Commonwealth of Massachusetts afford to let this state of things continue, and allow its western counties to become depopulated and unproductive.

STUDY OF CONDITIONS.

Before deciding upon the remedies, the causes of present conditions must be known. A review of the history and of past social and economic conditions, not only of western Massachusetts, but of the whole Commonwealth and the United States, leads to the conclusion that the decrease in population and the decline of agriculture in these towns are in no small measure due to other causes than lack of transportation. An understanding of these causes must be had in order to prescribe the proper remedies and devise means for restoring population to these towns, and increasing their industrial efficiency. Their rehabilitation is of first importance to the whole Commonwealth.

The total population and aggregate wealth of each of the five western counties have materially increased over that of any previous period of their history. From 1890 to 1900 the increase in the county of Berkshire was 29.7 per cent; Franklin, 12.9 per cent.; Hampshire, 22.1 per cent.; Hampden, 70.4 per cent.; Worcester, 42.3 per cent.; but it is to be noted that the growth of the cities and manufacturing towns has been so great that it has more than made up for the decrease in the rural communities. This fact of itself shows that city life and industrial pursuits have played their part in the complained-of decadence of the country towns. While the value per acre of farm lands has increased, the acreage of improved land in farms has materially decreased, not only in the five western counties, but in most of the counties of the State. The reasons are obvious.

It is patent even to the casual observer that the sheep, hog and cattle industry — except, possibly, the dairying interests — has declined not only in the western counties but throughout the State to a point where it is almost negligible, supplying as it does but a small fraction of the home demand. Herds of cattle and flocks of sheep once grazed on our hillsides, which have now become unproductive areas.

The social and intellectual life of many of the hill towns has gone to grow and expand itself in the manufacturing towns and city centers

This shift of center from the rural communities was not wholly due to inadequate transportation, nor will good roads and trolley lines restore the former conditions unless collateral remedies are found. This is shown in the case of many towns of Massachusetts that have their full quota of good roads and trolley lines.

The population of the hill towns was most numerous from 1800 to 1860 or 1870, a period immediately prior to the opening up of the middle and the far west. The fertile wheat fields and corn lands of the Mississippi and Missouri valleys were then, for the most part, virgin prairie, and the trunk-line railways unbuilt. When these began to be exploited, and the unlimited fertility and possibilities of that region began to extend their invitation to the farmers of the Atlantic seaboard,

the sturdy and adventurous young men were naturally attracted away from their own less fertile hills and valleys. The tide of emigration drained them away. The building of the railways hastened the exodus

Next, the introduction of steam power, scientific inventions, and the economy of consolidation of operations enormously developed manufacturing; and the population of the rural villages began to move into the factory towns. No rural district of that time could maintain its prestige over the towns located by the rivers and on the main lines of steam railroads, where abundant power and easy and cheap transportation made manufacturing profitable, and, consequently, attractive. This transition was the more rapid from the fact that agriculture did not keep pace with manufacturing in applying scientific methods to its pursuit and development. It may be said that the farmers in our rural districts have only just begun to wake up to the fact that they are a hundred years behind the times in scientific development. They have been left at a standstill, not only by the manufacturers, but by their brother farmers of the west and of European countries.

The rapid accumulation of wealth in the manufacturing and commercial centers afforded not only greater conveniences and luxury of living, but also greater social and educational opportunities than the farming districts could maintain. Up to that time every rural community had been able to supply most of its own needs. Each was well-nigh self-sustaining. The work of the shoemaker, the tailor, the blacksmith — every trade — was carried on by an individual journeyman in his own home town or village, while the farmer produced the necessities of life and the raw material for the home mechanic.

The farmers, merchants, mechanics and professional men made social life varied and attractive, while the church, the school and the academy — and last but not least, the town meeting — exerted a potent influence in molding and educating the people. The introduction of the factory system nullified these conditions. The development of manufacturing rendered the hand work of the individual mechanic unprofitable, and he was compelled to seek employment in the city factory. The

farmers who would not break the home associations remained to cultivate crops by the same methods that their fathers had used. This condition obtains in many sections of Massachusetts to-day.

DIVISION OF REPORT.

At the very outset of its work the commission was confronted by a wide divergence of opinion among citizens. Certain groups of men believed the transportation solution to be State highways; another group of men, equally earnest, believed that the commission should confine its recommendation to rail transportation, arguing that if the Commonwealth built good highways it would probably not build railroads. Rail transportation will develop a section as no other form of transportation will, yet good highways are of the greatest importance. The commission has therefore divided its report on transportation into two headings, — "State highways" and "railways."

TRANSPORTATION.

1. STATE HIGHWAYS.

When Massachusetts entered upon a systematic scheme for the construction of State highways she was one of the pioneers among American States. To-day the development of good highways is recognized throughout all parts of the world as constituting a most important and necessary branch of governmental work. The annual saving which accrues to citizens of the Commonwealth from good roads, in the lessened cost of hauling freight, runs into millions of dollars. This one factor alone has paid the cost and more than pays for the maintenance of State highways. The basis for any scheme of country-life development must begin with good roads. These highways may be supplemented by steam and electric transportation, but it is the roads that are used most frequently by the citizens of any community. A really good highway is more than a street for the passage of automobiles and teams. It is the sidewalk for the population. It is the path alike for the automobile, the team, the bicycle and the pedestrian. While Massachusetts has led in the past in the matter of construction of State highways she is now being crowded closely, if not sur-

passed, by other States. New York has appropriated \$100,000,000, and the State of Connecticut over \$10,000,000 for highways. Other States have also made large appropriations.

Change in Method of Construction.

When Massachusetts began the construction of State highways the most common vehicle with which she had to deal was the horse-drawn wagon. The load which could be carried was limited, and the damage to the highway consequently slight. A marvelous change has come over traffic, until now the number of Massachusetts automobiles actually used upon the State roads exceeds 80,000, and there are thousands of automobiles bringing tourists from other States.

The reduction in the price of automobiles has brought them within the reach of many of the farmers, and in an increasing degree motor trucks will be used by them for hauling their produce to market, thus affording rapid and cheap transportation of freight. These highways will also serve for public motor trucks and motor busses, which are being developed to a great extent, both in this country and in Europe.

It is a mooted question whether the development of the motor bus and motor truck will not eventually in some degree replace the present trolley and railroad system of transportation on short hauls in rural districts.

The advent of the improved highway will be followed by the development of the motor bus and motor truck, which to a great extent may aid in solving the question of transportation.

Highway Maintenance.

The problem of keeping up the highways is no longer a local problem. It is certainly of State-wide, as well as national, importance. Let first-class highways be constructed by any one of the towns of the Commonwealth having picturesque scenery and the character of traffic over their roads will immediately change. Different journals will exploit the route; the word will be passed around, and soon there will appear upon the highways of this remote town automobiles from all of the neighboring States and from distant parts. Bridges which

were built for horse-drawn vehicles, and which were ample to care for them, must be replaced with larger and more expensive viaducts; and walls which were sufficient to hold the road at curves and precipices must be strengthened and enlarged. There are not many compensating advantages to the towns except the few summer visitors who are attracted there. The hotel business in the larger centers is increased, but not the business in the small towns. The burden of keeping the country highways in repair has increased enormously in the past ten years, and with it there has been a decline in population. It is not unusual to find towns in western Massachusetts having a mile of highway for every adult male in the town, and there is also no question but that the increasing weight of motor vehicles is putting a strain upon the older State highways, which is a source of concern to those charged with their maintenance. There is doubt if some of the present highways are strong enough to prevent their maintenance becoming an increasing burden to the Commonwealth.

Much greater is the burden upon the little town. If the citizens thereof bond themselves to the small amount of \$10,000, this sum would not build a mile of the best highway. In many instances this \$10,000 means \$200 for every male adult in the town. The tourist who, taking his automobile, leaves Boston, Worcester, Springfield or Pittsfield and makes a circuit through the remote country districts which ten years ago were closed to him, puts a burden of road maintenance upon the farmer in the smaller towns which he is unable adequately to meet.

In the interest of that justice which is the basis of all relationship between government and people, the highways should be treated as a State problem, and should be developed and in some instances cared for by the Commonwealth, not alone as a cure for the isolation of the towns, but as a means of providing for the traveler and promoting the happiness of all the people.

It is important that whatever scheme is developed should be comprehensive, permanent and consecutive. It is inconceivable that the State should develop a system of patchwork on the highways. It is of very little importance to any section

to have a few miles of good highways, if such a road leads nowhere and if by the time the balance of the highway is constructed the first part of the roadway is worn out.

The eastern end of the Commonwealth of Massachusetts is now well taken care of. There are also two lines of State highway which extend from New York State on the west to connect with the splendid system of highways in the eastern part of the Commonwealth, but between these two main highways stretch many miles of highways which need improvement. Many of the roads in this territory can scarcely be designated as highways. These roads are poorly graded, made with any road material which was near at hand, and were built by people who knew little of the science of modern road building. Some of these secondary highways do not serve even the modest needs of the communities concerned. No criticism whatever should be visited upon the towns, because the task of building such highways, and fitting them to modern conditions, is far beyond their financial and constructive ability.

Small Towns Act.

The statute known as the "small towns act," under which the State Highway Commission appropriates a dollar for each dollar appropriated by the towns, has resulted in the construction of many miles of highway. All highways constructed in accordance with this act should be built under expert supervision. The funds should be more equitably apportioned between the State and the town. The cost of maintenance should fall upon the State where the town is unable to maintain the highway after it is built. There should be a more elastic method of apportionment of both the expense of building and the expense of maintenance. All such highways should be maintained under the same terms and conditions as are the State highways.

Expert Supervision.

Road making has become a science, which is being taught in many of the western universities, and which is receiving increasing attention in the east. We especially recommend that the Massachusetts Agricultural College and the different

State technical schools give more attention to this important branch of engineering. Graduates of these institutions who receive such training should be able with a few months' actual road experience to take charge of constructing roads. If the important highways upon which the State is expending so much money are to be left in the hands of road supervisors other than engineers, the supervisors should have some sort of technical training. We believe that the State Highway Commission should develop a system of road supervision, and that they should more frequently repair any roads found defective in any part of the Commonwealth, charging the cost of such repair to the city or town or to the State, as may be equitable. We believe that the people having charge of building our roads should have the opportunity afforded them by the State Agricultural College of taking a short course in road building, and that the towns having State highways should, either by uniting with other towns or of their own initiative, employ a road superintendent. We believe that there should be established a student grade for temporary engineering positions, the length of service to be three or four months. These positions should be open to students who pass their examinations in recognized engineering schools, or such special examinations as may be set for them by the Civil Service Commission at the request of the State Highway Commission. The town roads should be built under the direction of superintendents employed by the towns, but under the supervision of the State Highway Commission.

This commission has made inquiry of the transportation needs of the western counties, and is prepared to recommend to the State the immediate building of State highways which shall traverse the most neglected portions of the Commonwealth, and afford good highways to districts at present without such roads. We believe these roads should all be maintained by the State.

Appropriation.

We believe that the Commonwealth of Massachusetts should immediately appropriate for this work the sum of \$2,000,000, and for that purpose a bond issue should be made. The expense of building such highways cannot be fairly taken out of the

general appropriation for the State highways of the Commonwealth. If relief is to come to any community through good roads, it must not be extended over a long period of time. If it is so extended, the development of the section is stopped and the beneficial idea which actuated the spending of the money of the Commonwealth is thwarted by the delay in putting the matter into execution.

Recommendation.

We recommend that the special appropriation be spent on the following highways:—

Great Barrington, south to the Connecticut State line, via Sheffield.

From a point in the State highway in West Becket, down the Farmington valley, via Otis, to New Boston, in the town of Sandisfield.

Bonnyrigg Four Corners in the town of Becket; to the State highway in Hinsdale, via Washington station.

Huntington, northerly, via Worthington to Cummington; connecting with the new State highway in process of construction.

Hinsdale, easterly, via Peru to Worthington, connecting with the new State highway.

Plainfield to Cummington.

Belchertown to Ware, via Enfield.

Ashfield, via Spruce Corners and Lithia, to Goshen.

Turners Falls to Northfield, via Gill.

Dalton to Northampton, via Windsor, Cummington, Goshen and Williamsburg.

Warwick to Orange.

From Ware to Palmer.

Granville to Feeding Hills, via Southwick.

Athol to Worcester, via Petersham, Barre, Oakham.

Rutland and Holden.

Worcester to Milford, via Grafton and Upton.

Road Signs needed.

The commission, while making the examination of the roads, bridges and routes of proposed street railways of western Massachusetts, noted the inaccuracy, illegibility or entire absence of signs on important cross roads. Frequent complaints were made by travelers inconvenienced by this neglect, and who lost time in those places where the nearest house at which they could get information was at some distance from

such cross roads. Public convenience demands that durable, adequate signs be erected at the intersection of every important road in this State. These road signs should be uniform in material, design and lettering. The information given upon them should be reliable and should contain the distance to the next village or town, and also to the next large city. Signs of this character are of such importance that their installation and future care should be under the supervision of the State Highway Commission. We therefore recommend that the State Highway Commission be authorized and instructed to begin at once the installation throughout the Commonwealth of substantial and adequate road signs, and that these signs be under the future supervision of the Highway Commission. We recommend, therefore that the sum of \$10,000 be appropriated for this purpose.

The Small Towns need Assistance.

Obviously, the construction of State highways must be a failure if it forces upon the towns a luxury which they cannot afford. Therefore, if the State constructs an expensive highway equitable arrangements should be made for its care.

Obviously, the need of the hour and the need of every part of the State is for the best possible transportation facilities. The crying need is for good roads. These should be so constructed that when built they will be durable. A road which falls behind the traffic-need of any territory is no road at all.

2. RAILWAYS.

The language of the resolve authorizing the appointment of this commission, together with the history of preliminary legislation, indicates that it was contemplated that the fullest inquiry should be made as to the practical advantages and the necessity to Massachusetts of a well-developed system of rail transportation extending into districts not at present served.

The commission gave many hearings to the general public, and conferred with representatives of all the steam and electric railways concerned in the routes which were asked for, a list of which is annexed to this report. It also submitted special

inquiries to the New York, New Haven & Hartford Railroad Company, the Berkshire Street Railway Company, the New England Investment and Security Company, which controls the Springfield Street Railway Company and the Worcester Consolidated Street Railway Company; to the Holyoke Street Railway Company, the Northampton Street Railway Company, the Boston & Albany Railroad Company, and other steam and electric lines. Such inquiries and replies so far as considered helpful are attached hereto.

The commission also, as ordered by the terms of the resolve, conferred with the United States Department of Justice with relation to the following plans considered by it:—

1. Whether or not the New York, New Haven & Hartford Railroad Company should build the extensions which were contemplated by it in 1913.

2. Whether the street railways included in that scheme should consolidate irrespective of the steam railway companies and build such extensions.

3. Whether the Commonwealth should acquire any of the street railways and operate them.

4. Whether the Commonwealth should guarantee railway bonds for construction purposes.

The reply of Hon. George W. Anderson, United States Attorney, in behalf of the Department of Justice of the United States, together with the inquiries made by the commission, is attached to this report.

The commission also considered other plans, one of which was submitted by the Hill Towns Transit Association, and approved by the United Hill Towns Development and Improvement Association, which contemplates that the Commonwealth shall appropriate a million dollars yearly for five years, to be used under the direction of the Public Service Commission in building railways or extensions.

This plan contemplates the construction by the Commonwealth of all street railway extensions enumerated in chapter 765 of the Acts of the year 1913. These extensions are of two classes, — short extensions, which for the most part are impracticable, and where practicable should be built by the systems which they would serve as feeders; the second class

consists of long extensions through territory now sparsely settled, yet full of promise both as to increased population and farm development.

The plan proposed by the associations has these defects:—

First. — It commits the Commonwealth to a policy of public ownership of street railways, under conditions which are neither fair to the Commonwealth, to the territories nor to the experiment.

Second. — Many of the proposed extensions consist of the first class above referred to, and therefore cannot be built by the Commonwealth, and their building would be an appreciable burden upon existing lines, nor would they in any large degree serve as a solution of the transportation problem in isolated sections of the Commonwealth.

Third. — With reference to the second class, consisting of long extensions through sparsely settled communities, the plan of the associations contemplates that no extensions are to be built until the connecting lines agree to operate them. The commission has ascertained that the connecting lines will not operate any of these extensions upon reasonable terms, which, of course, nullified the plan proposed by the associations, and made it necessary for the commission to devise a different solution of the problem.

It is clear that the more isolated sections of the Commonwealth will not speedily obtain rail transportation unless it shall become the policy of Massachusetts to grant it for conserving and increasing the prosperity of those country districts which most need assistance. The motives which would bring State relief are in direct contradiction to those which induce the railways to consider extensions. They wish to enrich their stockholders. The State is moved by a desire to benefit the people and to develop the territory. Consideration of the needs rather than financial returns is required unless sections of western Massachusetts shall be allowed to become depopulated for lack of facilities for the commerce of the people with the residents of other sections. The State can afford to do what private capital cannot, since it has a possibility of return not shared by private investors, for the State would profit by any increase in the value of taxable property.

The plan proposed by this commission provides that the Commonwealth shall consider the construction of one street railway line through the Hampshire hills as an experiment.

Lines which are extensions of existing systems of street railway, and not of sufficient length to be operated independently, should be built and operated where practicable by these existing systems, and the Public Service Commission should be given authority to order existing systems to construct and operate such extensions when reasonably required, provided that such construction and operation is not legally confiscatory of the system as a whole.

Such authority would be somewhat analogous to that now exercised by the Gas and Electric Light Commission, which has power to order extensions of gas mains and electric light lines into new territory, even though such extensions may not be profitable.

In the opinion of this commission this is not an unwise exercise of power, since our transportation corporations, like our gas and electric light companies, are practically exercising monopolistic privileges, and depend for their existence and value upon franchises, which should always be exercised in the interest of the public.

Proposed Extensions.

While the State will profit from the increase in taxable property, on the other hand it will suffer a loss in taxation if the present gradual but ceaseless decline in population foreshadows the inevitable end of many hill communities and a return to conditions as primitive as those which obtained there a century and a half ago. Massachusetts has already begun the work of developing her rural communities, as evidenced by her highway, educational and other laws. The concentration of the activities of the State is now required more than ever upon the development of our farm resources, if she is to obtain for her citizens a supply of local foodstuffs from sections which at present return only a small cash value to the State, but which have splendid possibilities.

The proposition will go unchallenged that Massachusetts can ill afford to permit any large section of the State to pass

into disuse and decay without making a strong effort for its salvation. Massachusetts has a great incentive to increase her farming territory, since she has, of all the large States, the greatest proportion of city dwellers to population.

The towns in the five western counties which make the strongest plea for railways have now undeveloped agricultural possibilities, and in the past have supported double the present number of inhabitants in a fair degree of prosperity and comfort. Agricultural authorities agree that these towns can again reach a high state of development if they are provided with facilities for exporting their produce.

*New York, New Haven & Hartford Railroad Company and
Trolleys*

As water flows into the channels by which it can easiest reach the sea, so rural population follows the lines by which it can most easily reach the large market centers. Consequently, it gravitates from isolated sections towards railways. It is self-evident that the way to keep the people from moving toward the railways is to bring the railways toward the people.

The efforts of the New York, New Haven & Hartford Railroad Company directed toward the acquisition of western Massachusetts trolleys were welcomed by the people of such communities, for they seemed to promise just that kind of relief. They are not to be censured for leaning upon a broken reed, since some one was supporting it at the weak point and hiding the defect from sight. Leaning upon that reed the inhabitants of the hill towns believed that the solution of their transportation difficulties was at hand. Their disappointment, of course, was great when they learned that the corporation which had offered them so much was actually able to do nothing. They had learned, however, that the puzzling decadence of their towns was due largely to changing economic conditions which had operated to their disadvantage. They have since then been intelligently and persistently demanding that the Commonwealth equalize those conditions if it can. It is apparent that the New York, New Haven & Hartford Railroad will not build these extensions. Whether it would if it could or could if it would is not important.

Increasing the Power of the Public Service Commission.

Most of the proposed extensions which were investigated by the joint special committee, and which were considered by the New York, New Haven & Hartford Railroad, cannot be built unless the State is willing to enter upon the building of some unprofitable extensions, or to compel the railways to build such lines, or is willing to take over all transportation lines west of Worcester, and then develop the extensions. There has been going on in this country for several years a readjustment of the public attitude toward transportation companies. The State and Federal governments have been critical of much of our railway management. Especially has this been true as to roads which have adopted a public exploiting instead of a public serving policy. The result has been to make railways unwilling to build extensions or to increase equipment. In some instances this attitude seems justified, and in others unreasonable. Some of these extensions which have been under consideration are required, and when considered with other lines would afford a fair measure of return upon invested capital. While State ownership is no longer derided by thoughtful students, and foreign nations as well as the American government have safely experimented with it, and States have built and maintained public works for transportation purposes, yet it would seem as if compulsory legislation giving power to the Public Service Commission to order extensions would give a large measure of relief. At the same time, a reasonable attitude should be adopted by the State in the matter of authorizing increases of capital for such construction; especially such a policy would seem reasonable as to the following extensions: Athol to Petersham, Briggsville to the Vermont line, East Longmeadow to Hampden, Millbury to West Millbury and Sterling to Clinton.

As a general rule, street railways have been very slow to engage in the express business and unwilling to transport heavy freight. The public has in some instances been equally opposed to having such transportation done by the railways. Power should also be lodged in the Public Service Commission to require all street railways, at least suburban street railways,

to carry express matter and small freight, and many of them bulky freight. Country districts might utilize existing street railways for freight more than they are doing. Every section should be encouraged to make use of present facilities as much as possible.

The Public Service Commission, when it has power to decide such constructive and operative problems as may arise with relation to such proposed extensions, should be able to give many sections relief through existing railway systems without burdening the Commonwealth with their construction.

Fair to the Railway Companies.

The members of the commission favor that an increase in the powers of the Public Service Commission be brought about by amending chapter 784 of the Acts of 1913, because they realize that the power of compulsion must be used within constitutional limits, and the statute above referred to has in section 27 a proviso giving the Supreme Judicial Court authority to review any order of the Public Service Commission, and to modify or annul it to such an extent as it may be unlawful. Therefore all the rights of the railroads are protected, and no injustice could result from such order. The Public Service Commission already has power to compel reasonable and adequate equipment to be used (Acts of 1913, chapter 784, section 23); may order larger train crews (section 24); may compel interchange of traffic (section 25); may compel railroads to build switching connections to other roads; may require that the power system of a road be changed; and may regulate fares.

Franchise Revocation.

Railways are permanent means of transportation, and in order to avoid a multiplicity of small and divergently owned lines it is of great importance that power to compel construction and operation should exist in a Public Service Board, even though to exercise it to the fullest extent it should after judicial construction be found necessary to amend the Constitution. But this commission believes that such action will not be necessary. If the Public Service Commission, representing all the people of the Commonwealth, should make a finding

that these extensions are reasonably required, would not impose unreasonable burdens upon the systems as a whole, and that they should be built, the railway companies upon which such requirements were imposed would not be likely to oppose them. These companies will realize that public sentiment is behind the order. This Commonwealth, wiser than many States, has a great power in reserve, — the power specially reserved in its laws to revoke the franchises of public service corporations.

Public Supervision of Construction and Operation.

The keynote of this age is "service." The national government has developed great irrigation projects, the Panama Canal, and railroads in the west and in Alaska. New York has rebuilt the Erie Canal. Massachusetts has developed Boston Harbor, some of her rivers, many railroads, and a good system of State highways, and it is encouraging to note that she is investigating conditions in her rural districts. Nevertheless, this commission cannot urge the Commonwealth, in its desire to help the inhabitants, to enter into contracts for the building of numerous short extensions. If, however, the Commonwealth should undertake the building of any lines, we recommend that the first lines constructed be from Huntington or Williamsburg through Cummington to Hinsdale, and from Athol to Worcester. A table of costs of the extensions from Huntington or Williamsburg through Cummington to Hinsdale is annexed to this report.

Impossible to make Contracts with Street Railways now.

This commission has made an exhaustive inquiry of the different railways concerning the terms upon which they would build or operate extensions, but has been unable in a single instance to obtain from any railway a proposal other than the one-sided proposition that the State should build extensions, and guarantee to the operating company the expense of operation and some ultimate profit. The railways are unwilling to operate these extensions without such a guarantee, claiming that they are to be built through territory which will not produce profits for them. This commission has no power other

than to make inquiries and proposals. The Public Service Commission, having its powers thus increased, will be able to take up with the railways the making of a definite contract for construction and operation of these lines.

Experimental Ownership.

The State of Massachusetts is crossed by mountain ranges, and therein are found the most baffling isolation and the greatest physical difficulties to transportation. The present financial condition of the transportation lines operating through the mountainous territory in western Massachusetts makes it certain that the State cannot reasonably compel them to build extensions through the more isolated territory; nor is it possible, without inviting financial disaster to such lines, to compel them to build or operate; nor can the towns pay any large part of the cost of construction. Lines so constructed must be more or less of a philanthropic undertaking. They must begin with a limited and unremunerative business, and await the development of the territory served before they can become successful enterprises.

This applies particularly to any line built in that most neglected section of the State, the hilly stretch of territory, about 24 miles square, including the several valleys of the branches of the Westfield River, above Huntington. A railway from Williamsburg to Hinsdale would bisect the territory into nearly equal parts, and would supply needed transportation facilities to a large section. Many farmers are from 12 to 14 miles from a railway. This does not mean so much to people since the arrival of the automobile, yet horse-drawn vehicles are the best a farmer can afford, and a mile is as long as it ever has been to a horse.

The rule which holds good in most parts of the country, that the valleys alone are fertile, cannot be applied there because of the absence of sand or gravel in the soil and the existence of underlying stratum which is nearly impenetrable to water. The effect is to make the hillsides of this section fertile and well watered. They yield not only large crops of grass, root-crops and fruit, but retain their fertility surprisingly well.

Eleven towns would be served by such a line. The passengers leaving the cars at the eastern end of the line would be within a 10-cent fare of Northampton, from where for 33 cents on the steam railway, or 20 cents upon an electric railway, they could reach a purchasing population for their produce of more than 200,000 people, including the cities of Holyoke, Northampton, Springfield and Chicopee. These cities are already compelled to import from other States a large percentage of their agricultural and dairy products. This 400 square miles of Massachusetts territory should supply their produce. The land is now lying unproductive, largely because the difficulties of transportation make it impossible for a farmer to produce and market his goods at a profit. He will not raise bulky crops if he is more than 8 miles from market and has no modern transportation facilities. This section once supplied considerable dairy products to the neighboring markets, but under present conditions it is almost impossible to put these products on the market in competition with the butter, eggs and small produce coming from more distant but better situated territory. Bulky fruits and vegetables waste to the extent of thousands of dollars yearly, owing to the great cost of transportation. It costs a matter of \$2 per ton to transport goods between Cummington and the nearest railroad terminal, and this even with good roads and unrestricted competition. Under such conditions men will not farm. They will not make two blades of grass grow where one grew before unless they can sell the extra blade. Without rail transportation, even the fertilizer needed for these lands can be transported only at a prohibitive expense. No bestowal of State assistance could be more far-reaching and benevolent than that designed to benefit at once a section having these needs and possibilities, and to make it part of that system of intercommunication which binds the sections of the State together.

The difficulties of co-operation with existing railways is evident, since the Williamsburg-Hinsdale line would extend from the Berkshire Street Railway, a road already weak financially and not adequately serving its own territory, to the Northampton Street Railway, one of the smaller railways of the State. It would seem impossible to get private capital

to construct this line; yet of all the extensions proposed here is the greatest public need.

As it is difficult for a giant and a dwarf to keep in step with each other, so an attempted partnership between the Commonwealth and either of these roads would lead to confusion. If the people of the western part of the Commonwealth are to have State help in the solving of the transportation problem, the assistance should go first to this territory. The Commonwealth, if it decides to build any railways, should help these sections which are least able to help themselves.

Grant of Land.

The hill-town farmer is a sturdy citizen who is not seeking personal assistance but methods and means of developing his territory. Rights of way would doubtless be given by town or public-spirited citizens, but the construction of a railway by the Commonwealth should be made dependent upon such purchasing and granting without charge to the Commonwealth, either by the towns or by individuals, of the land upon which the railway is to be built.

Methods of Construction and Operation of Western Hampshire Line.

The route of this experimental developing railway from Williamsburg or Huntington to Hinsdale should not be fixed until a construction survey is made. The track should be of good construction and equipped with rolling stock for both freight and passenger service. It would seem that a combination passenger and freight car operated by a self-contained motor, preferably of the gasoline-electric type, offers the most practical equipment for the peculiar conditions which obtain along either of the proposed routes. Such cars are already in successful and economical operation in all parts of the country. The advantages are, in the first instance, that it renders unnecessary the electrification of the railroad, and this means a saving of first cost of about \$5,000 per mile. Secondly, it does not require a power plant; this makes the line more independent of connecting roads and power companies. Thirdly, cars of this type can be used on the rails of either a steam or

electric railway. It would be poor economy to construct a line which could not carry freight. A well-ballasted railway with rails of sufficient weight would cost \$35,000 per mile. An appropriation of \$1,200,000 should be made for the construction, equipment and operation the first year if the Commonwealth decides to construct the line.

State Ownership of the More Profitable Lines.

Many sections of the State need better transportation facilities, and their requests are based upon actual necessities. A study of a street railway map of Massachusetts will emphasize the conclusion that practically all the extensions asked for by citizens are intended to be feeders for steam or street railways. The profitable part of the fare would go in each instance to the main line. The small extensions would suffer. If the Commonwealth built such short lines it could not secure operative efficiency, and it would be a very poor business proposition. Except for the Huntington or the Williamsburg-Hinsdale line and the Athol to Worcester line, it is not clear that the railways should not be ordered to build at least some of the proposed extensions. If this cannot be done the Commonwealth before building extensions in general must be prepared to take over all of the lines of which these required constructions are extensions. Any other way would make the lines of the Commonwealth tributary to, and place them at the mercy of, the connecting roads. A partnership as to these lines between the State seeking to benefit the people and the street railways seeking to benefit investors is impossible. State compulsion is worthy of a trial before State ownership.

Lee-Huntington Line.

The Berkshire Street Railway has constructed and now owns a line from Lee to Huntington. The Berkshire Railway asserts that the line will not be in condition for safe operation until the spring of 1915. This line should be operated on or before May 15, 1915. The Public Service Commission has power to compel this, and we urge that it be put in operation by that time.

The statutory prohibition against the junction of the tracks of the Berkshire and other roads should be repealed so as to permit the said roads to exchange traffic.

Recommendations.

This commission recommends: —

First. — That the powers of the Public Service Commission be increased to such an extent that said commission may order existing street railways to build extensions where, in the opinion of said commission, public necessity demands the construction thereof, and such construction would not, in the opinion of said commission, eventually operate to confiscate the property of any of said street railways. The test of confiscation is whether the system pays as a whole. The unit in deciding whether such an order would result in confiscation is the whole system and not the extensions ordered.

Second. — That power should also be lodged with the Public Service Commission to compel all street railways, at least suburban street railways, to carry express matter and small freight, and many of them bulky freight.

The commission makes no specific recommendation to the Commonwealth either for or against the State ownership of railways, since such a policy would involve a radical departure from the present practice of the Commonwealth.

AGRICULTURE.

NEEDS AND POSSIBILITIES.

This Commonwealth — one of the most advanced of all the States in the matter of liberal laws, and one which has done much for the industrial worker — has failed to carry out the one great thing it can do for the benefit of all the people, — develop the farming industry.

Her soil is well suited for many kinds of agriculture. Massachusetts cannot compete with the west in the matter of growing grains, but can grow certain crops in competition with any part of the country. Fruit, berries, market-garden produce, root and grass crops grow abundantly, and with the proper kind of cultivation the land can be made to yield large crops of this kind.

The apples, peaches and pears produced in western Massachusetts, when properly cultivated, equal in beauty and far surpass in quality the product of the widely advertised apple and fruit sections of western America.

The agricultural possibilities of Massachusetts are only just beginning to be understood, for scientific farming has not reached the development here that it has in many other parts of the country. On the theory that "an ounce of prevention is worth a pound of cure," farsighted prudence requires that improvement should begin at once.

The land is naturally productive, and the New England farmer has a great advantage in location because once the produce is brought to the railways he has unsurpassed market advantages.

The hill towns of western Massachusetts are less than five hours away from the seaports of New York and Boston. Within this hilly territory are Springfield, Northampton, Holyoke, Chicopee, Greenfield and Westfield. Southerly are the large and prosperous cities of Hartford, New Haven and New York, while easterly are Boston, Worcester and other cities.

As an illustration of the manner in which production can be stimulated, it is estimated that the section bounded by the Boston & Albany Railroad, the Connecticut River Railroad, the Fitchburg Division of the Boston & Maine and the Boston & Albany Railroad between North Adams and Pittsfield should produce nearly half a million barrels of apples yearly, and that the best possibilities are in sections where there is now little if any commercial production. Individual instances were brought to the attention of the commission where men purchasing farms have so improved the old orchards as to increase their yearly productivity several thousand barrels.

In Hampden County there has been in operation for a little more than a year an organization known as the Hampden County Improvement League, and a similar organization has recently been formed in Hampshire County. These organizations are developing farms, interesting business men of near-by cities and teaching the farmers the rudiments of scientific crop raising.

THE REPORT FROM THE UNITED STATES DEPARTMENT OF
AGRICULTURE.

From a report submitted to us by the United States Department of Agriculture with relation to the soil, we quote: —

It should be stated, at once, as a result of an examination of the soils of the New England States, that they are in no way "worn out" or exhausted. In fact, only 12 per cent of the total land area, 25 per cent of the area in farms, and 63 per cent of the improved-land area is annually cropped. The remainder of the land heritage of the New-England States is marsh-land pasture, wood lot and forest, never yet subjected to devastating exploitation nor called upon through the wiser methods of progressive farmers to produce its quota of human sustenance.

In each of the New England States there still exist large tracts of land subject to occupation and improvement, while in the more northern States of Maine, New Hampshire and Vermont there remain extensive areas which are as much virgin soil as when the Pilgrims landed at Plymouth Rock.

Even the tilled soils of New England, which have been occupied for nearly two centuries and a half, are not exhausted. In too many instances they are merely neglected. Farms whose annual yield is barely sufficient for the support of the farm family are closely contiguous to others whose annual produce amounts to hundreds of dollars per acre. In the aggregate statistics of crop production for the United States the figures for the New England States show that the production per acre of corn in New England exceeds the average for the States of the "corn belt;" that the average yields of potatoes exceed all others except in restricted areas under irrigation; and that, wherever New England soils compete, their productivity excels or at least makes favorable comparison with that of any other section of the United States.

There need be no fear that the soils of New England will fail to respond to proper treatment and to careful tillage. The soil problems of New England are to find the proper uses for each different soil, to till each acre according to its individual needs, and to produce those crops whose high value per acre will justify the intensive culture which should be bestowed upon land of high value and of close proximity to exceedingly favorable markets.

The government report continues: —

Taking into consideration the market facilities, the known productiveness of the soils, the well-established condition of all social and community activities, there are few localities in the United States where farm lands are offered for sale at such low prices as within the New England States. Some of these lands have never been occupied or used since the discovery

of the continent; others have been occupied and improved, but have again fallen into disuse from a persistent attempt to compete with the prairie States in the production of cereal grains; others are so carefully and so well tilled that they constitute a model of what improved and specialized agriculture should be.

Speaking of fruit culture: —

It is a fundamental axiom of the production of plant life that any variety of plant will best reproduce its kind under the same conditions of soil and climate under which the variety was first produced. It, therefore, is evident that such New England apples as the Baldwin, Rhode Island Greening and Roxbury Russet can be made to attain their most perfect development upon the soils of New England, or under similar soil and climatic conditions to be found elsewhere.

While the planting and development of new orchards require considerable capital and a thorough knowledge of the orchard business, there are hundreds of partly neglected orchards in southern New England which can be bought at a low price and rejuvenated to furnish some revenues while the orchardist is planting and developing young orchards upon other portions of the same farm. The majority of these orchards are small, but they may be bought at low average farm land prices.

From the same report with relation to the local market: —

Taking New England as a whole, every farm family must be called upon to support with daily supplies of food at least three industrial, commercial or leisure families. There can be no doubt that later census figures will at least maintain this disparity, even if it is not increased by the remarkable growth of the great manufacturing cities of southern New England. In fact, the drift from the country to the town has been general, not only from the hills of New England, but also throughout the extent of the northeastern States. Thus New England is not isolated in its market conditions, for farm produce and all adjacent sections are experiencing to a marked degree the same influences which became first evident in the New England States some thirty years ago.

The increased cost of the fundamental necessities of life is only one of the evidences of the increase in the city-consuming population as compared with a relative, or absolute, decrease in the rural-producing population. Already it is necessary for the New England cities and towns to look for their supplies of milk, butter, cheese, poultry, eggs and meats to other than New England farms, and as other sources of supply are invaded, prices for perishable food products invariably rise. Such an inevitable working of the simple laws of supply and demand must surely lead to a more general utilization of the undoubted, dormant resources of New England farm lands.

That the people may be fed, and that New England may depend upon her own resources of soil and agricultural industry, it is only essential that the actual opportunities for a reoccupation of many idle acres should be made known, not only to those now engaged in agriculture within these States, but also of other progressive farmers who are in search of cheap lands, good markets and the short haul to the consumer, which is required for the profitable sale of those perishable food supplies constituting the daily nourishment of human beings.

Summer Vegetables. — The temporary summer population which comes annually to enjoy New England scenery and New England climate has been rapidly increasing for several years. This population furnishes an increased local market for farm products at just that period of the year when farm crops are maturing and at which, in other localities, there is liable to be an oversupply of perishable vegetables and fruits. One of the amazing features of the agricultural situation in certain of the New England States is that this supplemental population is literally forced to send to the city markets for those fresh vegetables and fruits which may be produced in good supply and of excellent quality in the very regions where the demand occurs. Thus the summer visitors are compelled to rely upon imported and more or less stale supplies where there is every opportunity to produce in abundant quantity and of excellent quality the same luxuries which are profitably grown in other States for sale within the borders of New England.

The sandy soils of the river terraces and the outwash plains of the southern and eastern portions of New England are especially well suited to the production of early vegetables and of the small fruits which are demanded by both the permanent and the temporary residents of these States. There are thousands of acres of such sandy lands, deemed too porous for the production of the staple crops, which are well fitted for the production of this summer supply for the temporary market. Such soils are sought out in the more southern of the Atlantic seaboard States for use in the production of extra early potatoes, of early sweet corn, of early tomatoes, of berries and of the small bush fruits. In the larger part of New England the same soils are neglected and are overgrown with a useless covering of scrub oak and pitch pine. Their reclamation and use may be effected through the simple methods of incorporation of additional organic matter in the surface soils, and of the careful tillage of such soils, with the end in view of conserving such moisture as is needed during the short-growing period of early vegetables and early maturing fruits. Supplementary irrigation is physically and economically possible in many localities.

Late Truck Crops. — Along the majority of New England streams, and at many places along the coast line of these States, there exist, in single bodies, thousands of acres of marsh land, which at the present time produce nothing of economic value or, at the best, only a scant herbage of coarse marsh hay. These lands usually consist of the dark, rich alluvial

deposits, skimmed from hundreds of upland acres. They only await proper diking and drainage to become the most fertile of the unused lands of the New England States. Their value for the production of tame grasses alone would in most cases amply repay their reclamation and their proper utilization as a source of supply for the later vegetables, and for such crops as cabbage, onions, celery and lettuce would pay a handsome return upon all expenditure for drainage and subjugation.

After speaking of the natural advantages the report continues: —

There are still for sale in the New England States thousands of acres of hill lands, fairly improved with buildings, and not inaccessibly remote from transportation facilities, at prices ranging from \$5 to \$15 per acre. These lands constitute one of the great dormant reserves for agricultural rejuvenation and for the cheap production of milk, cream, butter and cheese. Only the application of known methods for crop and animal production and management are necessary.

This unbiased government report and these statistics, supplementing as they do our observation and the testimony of others, convince the members of this commission that the New England initiative which has been so long directed toward attracting industries to the cities should be turned with enthusiasm into developing agriculture.

EDUCATION.

Educational opportunities similar to those existing for the vocational education of the city youth should be created for the training of young farmers. Ambitious young men and women go out of their environment to secure an education. They find vocational training at hand and do not return. Their education must be brought to them by the Commonwealth. Many of these people would prefer to remain on the farm and profit from scientific agriculture had they the opportunity. The successful farmer is on the profitable side of the high cost of living problem.

Vocational training in agriculture, the basis of all wealth, should be the easiest special training to obtain. The State should not encourage boys fitted by nature, environment and inheritance to leave the uncrowded agricultural industry for the overcrowded trades. Of course the boy who would be

unhappy on the farm cannot and should not be held there, but there is no reason why the State should encourage youth to leave the farm.

He who learns that he can make more of a success on a farm than in the city is likely to remain on a farm. People do not run away from prosperity. On the other hand, the citizens of any section may not understand the possibilities of their territory.

Farmers of many of these sections some years ago attempted to compete with the west in the growing of cereals, or in the raising of beef cattle and sheep, and, failing, either abandoned their farms or curtailed their activities. Some of them, attracted by the enthusiastic booming of western fruit lands, left these hills to become fruit growers in the west. This government report and the experience of others proves that the soil they left was as productive in that direction as any in America. Had these men the advantage of the right sort of information concerning their own soils and products they would have remained here to become successful. Massachusetts is not up to many other States in intelligently serving her farm population. The result is that in the midst of great possibilities we find poor crops, poor live stock and their natural custodian, — a poor man.

Transportation facilities must be adequate, since it is folly to stimulate production of goods where they cannot be sent to market at a profit, or to encourage people to remain where, because of isolation, there is not a fair prospect of prosperity and happiness. An effort should be made to stimulate immigration into the sparsely settled districts. Following that in regular sequence we must remove existing educational and social limitations and teach the farmers to get the greatest possible remuneration from their investment and the greatest possible happiness from their rural life.

As the shaping of marble, which is drudgery to an apprentice so long as he remains a novice, is changed to joy when he becomes an artist, so love for the work can raise the dignity of farming until more men will seek excellence in it for the sake of excellence.

The burden of educational and welfare work need not all be

on the State, but the opportunity presented should be open to all citizens. Any system devised should be so elastic that all may avail themselves of its benefits. A head full of scientific knowledge of farming means a barn full of crops.

PROGRESS ELSEWHERE.

A great many American States and even foreign governments are engaged in educational development suitable for extension into country communities. The making of efficient citizens is everywhere recognized as a good investment. New York and many other States not strictly agricultural have a system of study clubs under the direction of the State Educational Department, and even go so far as to loan books and picture slides to members. Missouri, Minnesota, Michigan, Indiana, Kansas, North Dakota, Oregon, Wisconsin, Maryland, Maine are also States which have traveling library systems by which clubs and small libraries are given a wide choice of books and educational facilities. The farmer receiving such service does not quarrel with the tax collector.

Education by mail courses has been adopted by State universities or normal schools in Missouri, Minnesota, Michigan, Kansas, New Mexico, Connecticut, North Carolina, Iowa, Montana, Wisconsin, Washington, Florida, Idaho, Texas. Agricultural colleges are in some of these States teaching that science by correspondence. These people have learned that ignorance is the most deadly disease with which any State can be afflicted, and their social physicians all agree that the best cure is education.

Educational work by correspondence is now being carried on in some degree by more than half the States. One of the eastern States which has developed courses along this line is North Carolina, which through its State University has an admirable extension system with correspondence, lecture service, country economics and other courses. The lecturers are members of the university, and the organization to which such lecturers are sent pay only the expenses of the trip. A choice of more than 125 lectures are offered to the people of that State, and the correspondence courses include almost every subject.

In the west the University of Wisconsin has brought a college education to every citizen who will use his brains and the United States mail. In the extreme west the State University of Washington and other universities and State libraries have developed similar courses of instruction. The correspondence students of the University of Washington are in all parts of that State. The lectures there are managed through local committees, which pay the lecturer a small fee, usually \$10, except where the work is for a general public purpose, when no fee is charged.

It is the opinion of this commission, as indicated by its correspondence with colleges throughout the country during the months of October and November, 1914, that such a system of university extension as we have in Massachusetts serves admirably the metropolitan district, yet it should be extended to the western Massachusetts cities and requires a correspondence study department to serve the farming communities of the Commonwealth. At least half the population of the State have been without benefit from this extension service, and the part of the State thus discriminated against is that section which has the least wealth per square mile and the greatest difficulties of transportation; also the greatest possibility of development. This commission has urged in its correspondence the necessity for co-operation between all the educational interests of the Commonwealth in rural welfare and educational work, to make up what is lacking in this direction.

COLLEGES AND RURAL WORK.

In connection with this inquiry the commission submits abstracts from the letters received from Pres. A. Lawrence Lowell of Harvard University and from Prof. James Hardy Ropes of Harvard, chairman of the Commission on University Extensions, also a letter from W. H. Lighty of the University of Wisconsin, in which the two systems are very well set forth.

The following is an abstract from a letter by Prof. James Hardy Ropes of Harvard University: —

Correspondence work is the only method of university extension which is possible in a rural State like Wisconsin or Minnesota, in which the population is mainly rural. In Massachusetts the task is to provide

for the needs of a mainly urban population. Accordingly, the efforts of the Boston institutions have been aimed at the establishment of classes in which the students would be in direct contact with the instructors, as they are in the ordinary work of a college. I send herewith a copy of the announcement of the courses of instruction given by the group of institutions in which Harvard bears its part.

If correspondence work is needed I am in the habit of referring applicants to the University of Wisconsin and the University of Chicago, both of which have elaborate systems, supported at great expense, which are available for citizens of Massachusetts. One can imagine no motive for duplicating here the facilities they offer.

The following is a copy of a letter from Pres. A. Lawrence Lowell, addressed to the secretary of this commission: —

DEAR MR. TALBOT: — Harvard University has no system of instruction by correspondence. As Dean Ropes points out, there is only need of it in a scattered community, but it is very ineffective as compared with direct instruction in classes, which is possible over the greater part of so thickly settled a Commonwealth as Massachusetts. Such a system of educational extension work by direct instruction has been carried on quite elaborately in Boston by a combination of all the institutions of higher education in the city and its vicinity. It includes not only the courses contained in the enclosed list, but also the Lowell Institute School for Industrial Foremen, which is virtually extension work of the Massachusetts Institute of Technology, with the support of the Lowell Institute.

Leaving out the agricultural work, with which we cannot compete, and correspondence courses, my impression is that the extension work done by the colleges and universities in and about Boston is distinctly greater than that done by the University of Wisconsin. I know that recently their extension work in applied science did not compare with ours here.

I ought to add that for some of our extension work, such as the school for foremen, there is no charge, and that in every case the fee is very small.

Very truly yours,
A. LAWRENCE LOWELL.

The following is a letter from the secretary of the correspondence-study department of the University of Wisconsin: —

MY DEAR SIR: — Your letter of November 27, addressed to the State Board of Education, has been forwarded to this department for reply.

The State of Wisconsin has been for the past eight years committed to

the policy of correspondence-study teaching. This method of instruction is one of the four major departments of the extension division which constitutes the extra-mural college of the university. Indeed, the number of students who pursue instruction in a formal way through the mail exceeds the number of those who pursue their studies in residence at the university. In addition to the formal correspondence-study instruction, the extension division, or extra-mural college, renders a very large service to citizens in their own homes, whether in official or in private capacities, through the department of debating and public discussion, department of lectures, and the department of general information and welfare.

For many years the Wisconsin Free Library Commission of the State has circularized traveling libraries throughout the Commonwealth. With the reorganization of the extension work eight years ago in connection with the department of debating and public discussion, as well as the work of other departments in the extension division, package libraries of clippings, severed newspaper articles, reports, monographs, circulars, etc., have been very largely circulated in the State. These traveling libraries are carried by the various methods available in common carriers, including the parcel post. Not only has the university and the free library commission done the above things, but in connection with these activities has developed a close co-operation between these agencies and the local school and library authorities.

Yours very truly,

W. H. LIGHTY,

Correspondence-Study Department.

This commission believes that the viewpoint of the Commission on Extension Service in this Commonwealth, as evidenced by the attitude of President Lowell, is wrong. It is shaped as the public policy of Massachusetts has been shaped, — by the fact that this Commonwealth is first of all an industrial State.

We believe, however, that our educational system should be elastic and should be suited not only to the residents of the city but also to the needs of the people in the smaller communities. We have indicated our belief that residents of Massachusetts should not be compelled to go to the University of Chicago or to the University of Wisconsin for educational instruction, but that it is the duty of the State and of our local educational institutions to see that the needs of rural Massachusetts in this regard are supplied. In fact, no social development which ignores this can be entirely successful.

The home work and social service departments of the western universities are not duplicated as they should be in Massachusetts. The country girl is entitled to the same practical education as her brother.

PRESENT EXTENSION WORK.

The Massachusetts Agricultural College is doing some extension work, but western Massachusetts citizens do not generally know that such instruction is available. It is undoubtedly within the power of the very able management of that college to increase its usefulness.

There should exist a general, instead of a very limited, knowledge that helpful service is available. The lecture course should be of the widest scope. Even elementary education should be available in some form suited to people living in isolated communities and compelled to labor. In the special field of agriculture, instruction even of high school pupils might be increased.

The local county organizations in the western end of the State apparently have had better results than the State college. They have created enthusiasm for agriculture instead of waiting for it to develop spontaneously. Undoubtedly the work of one will eventually supplement the other.

Fully as important as the education of the young men of our farming communities in the science of agriculture is that of educating women in the domestic sciences. The home economic courses of the western colleges might be used as models. These courses are welcomed in the western States by women so situated that they cannot leave their homes to study. Such women, especially mothers with small children, welcome this course in which they are taught food combinations, the selection of clothing, health and sanitation, and general household economics.

Farming cannot be taught too extensively. To-day it is recognized as a science where yesterday it was thought to be a series of accidents. The services of trained instructors can no more be dispensed with than that of the teacher in other lines of industry. The State can develop agriculture just as well as any other science. The instruction and development should

be done by experts, for it is useless to present information to people unless they can or are willing to utilize it. Some sections of Massachusetts are concerned with one kind of farming, other sections with a different kind.

Our department of agriculture is in need of reorganization and should be brought up to the times. Traveling instructors in agricultural subjects, from the faculty of an agricultural college, should be employed, and instruction by correspondence should be used in such a plan. The faculty of our normal and other schools might be used for lecturing upon general and educational subjects, and we should have experts upon health and domestic science for instruction of women's study clubs. The matured plan is for our educational experts to devise, but it involves few novel questions, since other States have been doing this same class of work with success.

SOCIAL CENTERS.

As to practical education of a lower than college grade, the public service rendered by various county organizations in many parts of the State should be supplemented by the State in the line of developing the community life and educational facilities of the smaller places. Social and educational development, with the schoolhouse for its central point, is now recognized as the best method of overcoming the lack of community life, and for neutralizing the call of the larger cities. A new and more vigorous State Department of Agriculture and a State Board of Education, after getting a clear idea of the needs and possibilities of rural Massachusetts, should reach out to do this work. The active co-operation of the State government, the boards of trade of the cities and towns, the agricultural societies, together with the educational, fraternal and religious organizations of the State, is required if the work shall be successful. Under competent guidance these can bring about a revival of the interest of Massachusetts in farming, which will bring enduring prosperity to the State and an increase in the welfare of its people.

RURAL CREDITS.

FARM FINANCE.

The producer, whether on the farm or in other lines of industry, must have capital. Any unthinking benevolence which would lead a financially independent class to become a borrowing class is to be deplored, yet much of the business of the world is done on credit. When the conservative farmer needs funds for constructive purposes he should have banking facilities nearly approximate to those of the small merchant, when it is possible to secure such by reasonable legislation. The Federal and various State governments have been considering the necessity of improvement in this direction, and agree that a better system of farm credit is required.

Directed by the General Court to make an investigation of the needs of rural credits, this commission finds that the movement which would repopulate rural communities and the demand for scientific farming are closely associated with a demand for credits, since an expanding business requires expanding capital.

Lack of borrowing capacity constitutes a profound weakness in the agricultural industry. What money farmers have is too often invested in outside schemes, when it might better be deposited in institutions which would loan it to other farmers for agricultural promotion. This commission has found that farmers are handicapped in obtaining loans from existing banks, and that but few of the insurance companies which loan millions in other States loan on farm lands in Massachusetts. The farmers need a more effective financial system, — a system that will promote habits of thrift and at the same time afford, to those who need assistance and are worthy of encouragement, opportunity to pledge their credit and industry for the use of a portion of the accumulated savings of the community. It must also keep a portion of its funds for home investment. Credit union banks can do for the farmers of Massachusetts what the co-operative banks have done for wage earners, and what land credit banks are doing for the farmer in foreign countries, notably in Germany.

FARM MORTGAGES AND FIRE INSURANCE.

The basic scheme of all rural credits must rest upon farm mortgages. In this connection it must not be forgotten that without fire insurance loans cannot safely be made, therefore the matter of fire insurance should also be carefully considered. Fire insurance companies doing business in this Commonwealth should be compelled to take a fair proportion of risks on farm property. It is now extremely difficult to obtain insurance to any reasonable amount upon property in the remote towns, while the companies fight for the select business of the cities. It is only equitable that these same companies should be more liberal toward inhabitants of the smaller places, and carry the risks of farmers and manufacturers with equal readiness.

The lack of opportunity to insure his property for a fair sum, together with the fact that the market for farm property is restricted, limits the farmer in the more isolated sections, and indeed the farmer in any section except those adjacent to large cities, in borrowing upon farm security. The building of new barns, houses or other permanent improvements and the purchase of farm machinery must wait until he accumulates capital. The savings banks are unable to help him because good banking judgment requires that loans be so placed that, in case of emergency, there are quick assets. The life insurance companies having funds to invest discriminate against him, partly because his loans are too small to handle profitably, partly because their investment activities are directed elsewhere, and partly because there is no place where farm mortgage bonds can be purchased in quantity. These companies loan large sums to western farmers, but practically nothing goes to our citizens. The rules which apply to savings banks which must have quick assets are reversed as to life insurance companies which require long-term loans, and since they do it elsewhere they should be prepared to make long-term loans upon good security to the citizens of a Commonwealth giving them so much profitable business as does Massachusetts.

The sending of all the insurance money for investment in farm loans to other sections, while the farmers of New England

are unable to borrow money for agricultural development, is unjust and unreasonable. Investment development, like charity, should begin at home.

THE LIFE INSURANCE FUNDS SHOULD BE AVAILABLE.

The Berkshire Mutual, Boston Mutual, Columbia Mutual, John Hancock, Massachusetts Mutual, New England Mutual, and State Mutual, all Massachusetts companies, have admitted assets of \$314,410,562, and a gross annual income of \$72,300,731. The life insurance companies of other States doing business in Massachusetts have admitted assets of \$3,878,697,186 and an annual income of \$762,838,899. It is a remarkable fact that out of the \$4,193,107,748 of admitted assets of these great life insurance companies, practically none of them have invested in farm mortgages of Massachusetts. An unintentional discrimination is just as difficult to contend against as an intentional one.

The Massachusetts Mutual Life Insurance Company, with headquarters in Springfield, makes no investment in farm mortgages, but has over \$30,000,000 loaned on city property, nearly all outside of New England. The New England Mutual Life Insurance Company, Boston, makes no investment whatever in farm mortgages. The John Hancock Mutual Life Insurance Company of Boston makes no investment in Massachusetts farm mortgages, but has an investment of about \$44,000,000 in farm mortgages in the western and southern States. The State Mutual Life Assurance Company has no farm mortgage investments. The Berkshire Life Insurance Company has but \$8,100 in farm mortgages in Massachusetts, as against \$21,100 in Indiana. One of the larger foreign companies, the New York Life Insurance Company, operating extensively in Massachusetts, has no investment in farm mortgages therein. This company, however, has in Iowa 210 farm loans aggregating \$1,398,052; Missouri, \$956,335; Kansas, \$966,583, and large investments in Nebraska and South Dakota. The Mutual Life Insurance Company of New York has no farm mortgages in Massachusetts. The Mutual Benefit Life Insurance Company of New Jersey has no farm mortgages in Massachusetts, but has \$71,303,303 invested in farm mort-

gages elsewhere. The Ætna Life Insurance Company has no Massachusetts farm mortgages, but has farm mortgages of \$54,383,802 in 17 States. The National Life Insurance Company, Vermont, has 8,753 farm loans aggregating \$27,168,858. With the exception of a few farm loans in Vermont it has no outstanding New England mortgages. From these instances, which are typical, it will be seen that the Massachusetts farmer has no assistance from the great life insurance companies. The commission has made inquiry only from life insurance companies, but the same lack of investment in Massachusetts farm mortgages obtains generally.

It must not be forgotten that in the friendly rivalry for industrial supremacy other great States devote the energies of their officials to financing home industries. Massachusetts without this spirit will lose in the struggle. In matters of industrial development our motto should be, "Massachusetts first."

MASSACHUSETTS A PIONEER.

The credit union statute of Massachusetts, chapter 419 of the Acts of 1909, was designed to aid people of modest means in towns or country to practice financial co-operation, but it limited loans too closely to be of great benefit to the farmer. That statute has developed more wage-earning and social, than strictly farm, unions.

The commission believes that the time has arrived to give Massachusetts a statute of wider scope than the act of 1909, and that any bank created by it should have the widest possible field of service, but under the closest State supervision. Co-operators desiring to deal with farm-land development should be allowed to employ the title "Farmers' Land Bank."

FARM-LAND BANKS.

Chapter 437 of the Acts of 1914 authorized credit unions to make long-term loans on farm real estate, and to issue bonds against them, but limited the unions too closely. Funds at the command of such unions are insufficient to meet the needs of the farmer in the matter of farm loans. This commission presents a bill which authorizes the incorporation under State law of one or more farmers' land banks, to issue bonds secured

by underlying first mortgages on farms, title to which is vested in their occupants. The object is to make it easier for tenants to become landowners and for farmers to develop their holdings.

Any new legislation should safeguard the present admirable banking system of Massachusetts, the shareholders, the borrowers and the creditors of the bank. It should also provide for retaining a portion of the funds of insurance companies for investment here.

The farmers' land bank loans should be confined to first mortgages upon farms, the title to which is vested in the borrower who occupies the same. All bonds issued should be based upon ample values.

The mortgagor should make such annual payments as will amortize the loan within a reasonable period. Such payments upon principal, plus the saving out of the interest payments, constantly accrue to the credit of the loan. The margin of safety is thus constantly increased, since the full amount of farm real estate is retained as security. In this way the borrower without feeling the burden is paying off his debt, while the lender (that is, the investor in the land bank's bond) is amply secured from loss.

The commission believes that the capital of the farm-land bank, represented by its land reserve certificates, should be free from all taxation. The land already pays a tax, and this exemption will give some State help to the plan. The bonds which the bank issues upon the above-described collaterals should also be free from taxation except inheritance taxes. This is to make the securities a popular investment, especially if available in small denominations.

In these ways ample capital to assist Massachusetts agriculture may be forthcoming, to the mutual advantage of all concerned. All this will be accomplished without requiring any guarantee of the farm-land bank by the State itself, or doing the slightest injustice to any person or industry.

FIELD FOR THE FARM-LAND BANK.

There are about 37,000 farms in Massachusetts containing nearly 3,000,000 acres out of the something more than 5,000,000 acres in the State. Nearly half of the land in farms is im-

proved. The total value of farm property exceeds \$225,500,000 according to the Federal Census of 1910, — an increase of 24 per cent. over the returns in 1900. The average farm contains about 80 acres. The average value of all property per farm is a little over \$6,000, and the average value of land alone is about \$37 per acre.

The farms operated by tenants and managers number about 5,000. Concerning these, no mortgage reports are available. The Federal Census for 1910 shows that about 32,000 farms in the State are owned in whole or in part by their operators, and of these 41 per cent. are mortgaged. The Federal statistics as to mortgage indebtedness cover only farms owned entirely by the operators, which number 12,030. The indebtedness on these was returned at \$16,371,000. The lands and buildings were valued at almost \$50,000,000. Thus the mortgage was for about 33 per cent. of the value, compared to 42 per cent. of the value in 1890. There has been but little increase in the average size of mortgages in the twenty years, but the natural increase in land values has added to the owner's equity. The average farm mortgage in 1910 was \$1,361; in 1890 it was \$1,323.

It is estimated that with the improved method of land finance provided for in the commission's bill many of the present 13,000 farm mortgages would be refunded into the new system and gradually paid off; also that in the course of time 5,000 additional mortgages might be written for the purpose of buying or improving farms. Assuming that eventually farm-land banks may take over half of the existing mortgages and provide for 5,000 new ones, this would represent \$15,000,000 of bonds.

The farm-land bank could begin business quite effectively with a capital of \$50,000 or more.

It is the opinion of the commission that the insurance companies doing business here could safely and without loss invest in both land reserve certificates and bonds, and that investment in Massachusetts real estate mortgages or in such securities should be required. The bill recommended by this commission is attached to this report.

BILLS SUBMITTED.

[No. 1.]

AN ACT TO PROVIDE FOR THE CONSTRUCTION OF CERTAIN HIGHWAYS IN THE FIVE WESTERN COUNTIES OF THE COMMONWEALTH.

Be it enacted, etc., as follows:

1 SECTION 1. The Massachusetts highway commission is
2 hereby authorized and directed to lay out, construct and
3 complete during the years nineteen hundred and fifteen, nine-
4 teen hundred and sixteen, nineteen hundred and seventeen
5 and nineteen hundred and eighteen, those certain highways
6 located in the five western counties of the commonwealth,
7 described as follows:—

8 No. 1. — From Great Barrington, south, through Sheffield,
9 and that part thereof known as Ashley Falls, to the Connecti-
10 cut state line.

11 No. 2. — From Pittsfield to Northampton through the
12 towns of Hinsdale, Windsor, Cummington, Goshen, and that
13 part of Northampton known as Williamsburg.

14 No. 3. — From the village of New Boston in the town of
15 Sandisfield, northerly, up the Farnington valley through the
16 towns of Otis and West Becket, to connect with the main
17 highway running east and west, known as the Jacob's Ladder
18 road.

19 No. 4. — From Bonny Rigg Four Corners in the town of
20 Becket, through the town of Washington, to the present state
21 highway in the town of Hinsdale.

22 No. 5. — From the main highway in Huntington northerly
23 through Worthington to Cummington, to connect with the
24 highway between Dalton and Northampton, now in process
25 of construction.

26 No. 6. — From Hinsdale, easterly through Peru to Worth-
27 ington, to connect with the last described road from Hunting-
28 ton to Cummington.

29 No. 7. — From Plainfield to Cummington to connect with
30 the highway between Pittsfield and Northampton now in
31 process of construction.

32 *No. 8.* — From Belchertown, through Enfield and Ware, to
33 Palmer, to connect with the main highway between Boston
34 and Springfield.

35 *No. 9.* — From Granville Corners, through Southwick to
36 Feeding Hills in the town of Agawam.

37 *No. 10.* — From Ashfield, through Spruce Corners to
38 Lithia in the town of Goshen, to connect with the highway
39 between Pittsfield and Northampton now in process of con-
40 struction.

41 *No. 11.* — From Gill to Turners Falls to connect with the
42 main highway between Boston and North Adams.

43 *No. 12.* — From Athol through Petersham, Barre, Oakham,
44 Rutland, and Holden to Worcester, connecting the main
45 highway running westerly from Boston through Athol to
46 North Adams, with the main highway running westerly from
47 Boston to Springfield through the city of Worcester.

48 *No. 13.* — From Worcester through the towns of Grafton,
49 and Upton to Milford, to connect with the main highway
50 leading to the Cape.

51 *No. 14.* — From Warwick to Orange to connect with the
52 main highway from Boston to North Adams.

1 SECTION 2. For the purpose of carrying out the provisions
2 of this act, the highway commission is hereby authorized to
3 expend a sum not exceeding two millions of dollars.

1 SECTION 3. The county commissioners of the five western
2 counties aforesaid to wit: — Berkshire, Franklin, Hampden,
3 Hampshire and Worcester, are hereby authorized and directed
4 to furnish rights of way in their respective counties, and to
5 lay out such locations as the Massachusetts highway com-
6 mission shall approve and suggest, in carrying out the pro-
7 visions of this act. But none of said ways, or any parts
8 thereof, shall thereby become state highways; nor shall this
9 act be construed as prohibiting the laying out or constructing
10 of said ways, or parts thereof, as state highways, under the
11 laws applicable thereto, whenever said highway commission
12 shall deem such course advisable.

1 SECTION 4. For the purpose of meeting the expenditures
2 hereby authorized, the treasurer and receiver general is hereby
3 empowered, with the approval of the governor and council,
4 to issue certificates of indebtedness to the amount of two

5 millions of dollars, for a term not exceeding fifteen years.
6 Such certificates of indebtedness shall be issued as registered
7 bonds, or with interest coupons attached, and shall bear
8 interest at a rate not exceeding four per cent per annum,
9 payable semi-annually. They shall be designated on their
10 face, "Western Massachusetts Highway Loan", shall be
11 countersigned by the governor, and shall be deemed a pledge
12 of the faith and credit of the commonwealth; and the princi-
13 pal and interest thereof shall be paid at the times specified
14 therein in gold coin of the United States or its equivalent.
15 They shall be sold at public auction, or disposed of in such
16 other manner, at such times and prices, in such amounts and
17 at such rates of interest, not exceeding the rate above speci-
18 fied, as shall be deemed best, but none of the said bonds shall
19 be sold at less than the par value thereof. The treasurer and
20 receiver general shall, with the approval of the governor and
21 council, provide for the payment of said loan as it falls due
22 and the interest thereon, by such annual payments as will
23 extinguish the same at maturity, and the amount of such
24 annual payments shall be raised annually by taxation in the
25 same manner in which other state taxes are assessed and
26 collected, without further legislation.

1 SECTION 5. One fourth of any money which may be ex-
2 pended under the provisions of this act for a highway in any
3 county, with interest thereon at the rate of three per cent
4 per annum, shall be repaid by said county to the common-
5 wealth in such installments and at such times within six
6 years thereafter as said commission, with the approval of the
7 auditor of accounts, having regard to the financial condition
8 of the county, shall determine. The treasurer and receiver
9 general shall apply the money so repaid to the appropriation
10 to be expended by said commission.

1 SECTION 6. The provisions of this act shall not, in any
2 way, preclude the five western counties aforesaid, from par-
3 ticipating in the annual appropriation made by the common-
4 wealth, for the construction and care of highways, or from
5 receiving the same allotment from said annual appropriation
6 as would be given them, had this act not been passed.

1 SECTION 7. This act shall take effect upon its passage.

[No. 2.]

AN ACT TO AUTHORIZE THE EXTENSION OF STREET RAILWAYS.

Be it enacted, etc., as follows:

1 SECTION 1. The public service commission, upon the pe-
2 tition of the board of aldermen of a city or the selectmen of
3 a town in which there is no existing location of a street
4 railway company, shall have power, if it certifies that public
5 convenience and necessity require, to order a street railway
6 company which has a location in an adjoining city or town to
7 extend its railway into the petitioning city or town. Such
8 certification that public convenience and necessity require
9 such extension shall be conditioned upon a finding by the
10 commission that the construction, maintenance and operation
11 of the proposed extension will not, in the opinion of the
12 commission, diminish the facilities for travel or increase the
13 rates of fare on existing lines, nor so affect the future revenue
14 of the company as to prevent it, after paying all expenses of
15 operation, fixed and other lawful charges, and after making
16 proper provision for depreciation, from making a reasonable
17 return to stockholders upon the capital investment. After
18 such certification that public convenience and necessity
19 require such extension such street railway company shall,
20 subject to the provisions of the general law relative to the
21 location, construction and operation of street railways so far
22 as consistent with the provisions of this act, apply for such
23 locations as may be necessary for the construction of such
24 extensions. If such application has, in whole or in part,
25 been refused by any city or town, or has been neither granted
26 nor refused within three months after the filing thereof, such
27 street railway company shall, within thirty days of such
28 refusal of a location, or at the expiration of said three months,
29 apply to the public service commission for such location, and
30 the public service commission may, if it finds that public
31 necessity and convenience so require, enter a decree granting
32 a location. Any location granted under the provisions of this
33 act which the public service commission certifies to be con-
34 sistent with the public interests shall be a valid location.
35 The commission shall have power to order such street railway
36 company to construct, maintain and operate its railway upon
37 any such location, and may prescribe the time within which
38 the work of construction shall be done.

1 SECTION 2. This act shall take effect upon its passage.

[No. 3.]

A BILL TO PROVIDE FOR RURAL CREDITS.

Be it enacted, etc., as follows:

ARTICLE I.

OBJECT.

- 1 The objects of the farm-land bank corporations chartered
- 2 hereunder shall be to promote rural mortgage credit in Mas-
- 3 sachusetts and to disburden rural estates therein.

ARTICLE II.

UNDERTAKINGS.

- 1 The undertakings of such corporations shall comprise: —
- 2 (a) The granting of loans on first mortgage security on the
- 3 whole and undivided fee of agricultural lands in the common-
- 4 wealth of Massachusetts.
- 5 (b) The issuing of bonds on the basis of and secured by the
- 6 mortgage liens so obtained.
- 7 (c) The pledging of the mortgages obtained as security for
- 8 bonds issued.
- 9 (d) The sale of such bonds and the reinvestment of the
- 10 funds.

ARTICLE III.

CONSTRUCTION.

- 1 The words, "farm-land bank" shall be construed as re-
- 2 ferring to banks incorporated under the provisions of this act.
- 3 The word "commissioner" shall be construed as referring to
- 4 the bank commissioner of the commonwealth. The word
- 5 "mortgage" shall be construed as referring to farm-land
- 6 mortgages. The word "bond", to bonds issued by the land
- 7 bank upon farm mortgage security. The words "land reserve
- 8 certificates" and "shares" are used interchangeably. The
- 9 words "land reserve", "land reserve fund" and "capital
- 10 stock" are used interchangeably.

ARTICLE IV.

INCORPORATION OF FARM-LAND BANKS.

- 1 SECTION 1. Associations for carrying on the business of
- 2 farm-land banking under this act may be formed subject to
- 3 the approval of the bank commissioner, by any number of

4 persons, not less in any case than ten, each of whom shall
5 subscribe to the capital stock. They shall sign an agreement
6 of association which shall specify in general terms the objects
7 for which the corporation is formed and the rules it adopts for
8 the regulation of its business and the conduct of its affairs.
9 The provisions so far as applicable, of sections one to sixteen,
10 both inclusive, of chapter one hundred and fifteen, Revised
11 Laws, shall apply to such corporation and it shall be subject
12 to supervision of the bank commissioner in the manner and
13 to the extent set forth in said chapter and of chapter five
14 hundred and ninety of acts of the year nineteen hundred and
15 eight. "Farm-land Bank" shall be a part of the title of every
16 such corporation, and these words shall not be used by any
17 institution other than those incorporated under this act.

APPROVAL OF BANK COMMISSIONER.

1 SECTION 2. The agreement of association, together with
2 the by-laws, shall be submitted to the bank commissioner.
3 He shall, when in his opinion the same comply with the law,
4 endorse his approval thereon and also shall certify whether
5 or not in his opinion, public interest requires such a bank.
6 He shall not refuse to certify that at least one farm-land bank
7 is necessary. If he shall approve said agreement of associa-
8 tion and by-laws and shall certify that public interest requires
9 the establishment of such a farm-land bank the secretary of
10 state shall issue a charter and the association shall thereupon
11 become a body corporate.

LIMITATION OF NUMBER OF BANKS.

1 SECTION 3. The bank commissioner shall refuse to certify
2 that a farm-land bank is reasonably required so long as in his
3 opinion the farm-land banks already formed or projected will
4 answer the necessities of those seeking loans.
5 After one such bank shall have been chartered another
6 farm-land bank shall not be chartered under this act until,
7 after public hearing to all parties in interest, the banking
8 commissioner shall be convinced that public welfare and the
9 purpose of this act require such additional bank.

FORM OF SHARE CERTIFICATE.

1 SECTION 4. The form of certificates to be issued to persons
2 or corporations contributing to the land reserve fund or stock
3 of a farm-land bank shall be in substance as follows: —

MASSACHUSETTS FARM-LAND BANK.

(Incorporated under the laws of the Commonwealth of Massachusetts.)

Number of certificates (Location of main office.)

Number of shares Par value

This certifies that John Doe has paid into the Treasury of the Massa-
chuestts Farm-land Bank,
Dollars the same being in full for shares in its land reserve
certificate represented hereby. This certificate is transferable on the
books of the corporation in person or by attorney only upon surrender
of this certificate and in accordance with chapter of the act of
1915 of the Commonwealth.

The holder of this certificate is entitled to one vote for each one hundred
dollars of par value and to a share of the profits. An annual dividend of
three per cent. shall be cumulative.

In witness whereof, The Massachusetts Farm-land Bank has caused
its corporate seal to be hereto affixed and this certificate to be signed by
the Treasurer and President at
Massachusetts, this day of A.D.
(Seal of the Corporation.)

President. Treasurer.

Par value of shares, \$100.

BEGINNING BUSINESS.

1 SECTION 5. The place where its office is to be located shall
2 be within the commonwealth and shall be stated in the
3 agreement of association and in the charter, but may be
4 changed from time to time upon the request of such farm-
5 land bank with the approval of the bank commissioner.
6 The land reserve fund or capital stock shall in no case be less
7 than fifty thousand dollars. Such capital stock may be
8 increased or decreased from time to time, subject to the
9 approval of the bank commissioner, but at no time shall be
10 less than the minimum herein set forth.

1 SECTION 6. No such corporation shall receive funds or
2 make loans until a certificate is given it by the bank com-

3 missioner that it has complied with all requirements of law
4 and is authorized to do business, nor shall any amendment to
5 its by-laws become operative until approved by the bank
6 commissioner.

CREDIT UNIONS MAY PURCHASE SHARES.

1 SECTION 7. Any credit union or farmers' credit bank
2 authorized to do business under the laws of Massachusetts is
3 hereby empowered to purchase shares in a farm-land bank to
4 an amount not exceeding twenty per cent of its capital and
5 surplus. Trust companies may so invest not to exceed five
6 per cent of their capital and surplus. Any co-operative
7 corporation incorporated under chapter one hundred and
8 sixteen, Revised Laws, may become a shareholder. Any
9 farmers' credit bank, credit union or trust company may act
10 as agent for the farm-land bank in the placing of loans on
11 real estate and may receive compensation therefor.

ARTICLE V.

POWERS.

1 The said corporation shall have power: —

2 *First.* — To adopt and use a corporate seal.

3 *Second.* — To have perpetual succession unless dissolved
4 according to the provisions of its by-laws and of the laws of
5 the commonwealth or by act of its shareholders: *provided*,
6 that no such dissolution shall in any way impair the rights
7 of the creditors of such farm-land banks; *provided, further*,
8 the right of the legislature to annul any such charter is
9 expressly reserved.

10 *Third.* — To make contracts.

11 *Fourth.* — To sue and be sued, complain and defend in any
12 court of law and equity as fully as natural persons.

13 *Fifth.* — To elect or appoint not less than six nor more
14 than fifteen directors, of whom not more than one third may
15 be non-shareholding borrowers, and by its board of directors
16 to appoint a president, vice-president, and other officers who
17 must be shareholders, to define their duties, require bonds of
18 them, and fix the penalty thereof, dismiss such officers or
19 any of them at pleasure and appoint others to fill their
20 places.

21 *Sixth.* — To make loans upon farm lands anywhere within
22 the commonwealth: *provided*

23 (a) That such loans are made for not longer than thirty-
24 five years.

25 (b) That such loans are secured by a first mortgage or first
26 deed of trust on farm lands.

27 (c) That no loan exceeds sixty per cent of the value of the
28 farm mortgaged, the value to be determined by an appraisal
29 satisfactory to the committee on loans.

30 (d) To provide the maximum of interest to be paid to
31 shareholders, which shall not exceed six per cent per annum,
32 except as hereinafter provided. Not more than three per
33 cent annually shall be cumulative. Such fact shall be stated
34 in the land reserve certificates.

35 (e) That every such mortgage for a longer period than five
36 years shall contain a mandatory provision for the amorti-
37 zation of the loan, or reduction of the same by annual or
38 semi-annual payments on account of principal.

39 (f) That every such loan may be paid off in whole or in
40 part by the borrower, in accordance with rules to be pre-
41 scribed by said bank and approved by the bank commissioner,
42 at any interest period after such loan has continued for five
43 years, by the payment of the whole or a part of such loan,
44 with interest to such date, after crediting the amortization
45 payments on the same as and when they were made.

46 (g) To issue, sell and trade in its own collateral trust bond
47 which shall be known and described as farm-land bonds,
48 secured by the deposit, as elsewhere herein provided, of first
49 mortgages or first deeds of trust (and of notes or bonds
50 secured thereby): *provided*

51 (1) The rate of interest upon the farm-land loans evidenced
52 by the mortgages or deeds of trust held by the bank as
53 security for its own bonds shall not exceed the rate of interest
54 paid on such bonds by more than one per cent annually
55 upon the amount unpaid on the loan, and shall not exceed an
56 additional one per cent to cover charges of administration.

57 (2) All bonds issued shall be payable on a date specified
58 and shall be subject to call at par, with accrued interest and
59 profits at any interest period, after the date of issue, or after
60 a specified time, by such proper notice and advertisement as
61 may be provided by the by-laws and approved by the bank
62 commissioner.

63 (3) The said land bank is given authority to impose fines
64 upon borrowers for failure to pay interest promptly, but such
65 fines shall not exceed one half of one per cent per month upon
66 the amount of the loan for the time that the default con-
67 tinues. In no event shall fines for more than three months
68 upon any default be collected.

69 (4) Such bonds shall be always protected by the deposit,
70 as security therefor, of first mortgage or first deed of trust
71 farm loans (and of notes or bonds secured thereby), maturing
72 not less than five years after their date.

73 (5) As the amortization payments are credited upon the
74 loans deposited as security, the bonds issued by the bank and
75 secured thereby shall be called and paid, or purchased in the
76 open market and retired to the extent of the credits made
77 upon such first mortgage or first deed of trust farm loans held
78 as security for the same, under rules and regulations of the
79 bank.

80 (6) The first mortgage or first deed of trust farm loans (and
81 the notes and bonds secured thereby) held as security for
82 such bonds shall at all times be in the possession and under
83 the control of the said bank, or if so required by the said
84 bank commissioner, of a trustee, and that a register of such
85 first mortgages or first deeds of trust shall be at all times
86 kept by the bank, which record shall be open to inspection
87 upon reasonable notice by any interested party.

88 (7) No farm-land bank bond shall be issued against any
89 mortgage, deed of trust (or note or bond secured thereby)
90 which falls due earlier than five years after its date.

ARTICLE VI.

LIMITATIONS.

1 Every farm-land bank shall be subject to the following
2 specific limitations: —

3 (a) The amount of farm-land bank bonds that may be
4 issued and outstanding at any one time by such farm-land
5 bank shall not exceed twenty times its capital and accumu-
6 lated surplus.

7 (b) The charges of administration imposed by the farm-
8 land bank upon the borrower for handling any loan shall not
9 in any instance exceed an annual charge of one per cent upon
10 the amount unpaid on the loan.

11 (c) On loans for longer than five years the payments to be

12 made annually or semi-annually by the borrower shall in all
13 cases be sufficient to pay interest charge upon the loan, the
14 administration charges of the bank, and an amortization
15 payment sufficient to retire and pay off the amount of the
16 principal borrowed (as evidenced by the face of said first
17 mortgage or first deed of trust and the notes or bonds se-
18 cured thereby) at its maturity.

19 (d) No farm-land bank shall at any time loan any money
20 upon the faith or credit or assignment of its own stock, or of
21 the stock of any other farm-land bank; nor shall any farm-
22 land bank loan to, or on the credit of any one individual or
23 institution, either on the security of land or on any other
24 security, an amount in excess of twenty per cent of the sum
25 of its then paid-in capital and surplus.

ARTICLE VII.

HOLDINGS OF REAL ESTATE.

1 That a farm-land bank may purchase, hold, and convey
2 real estate for the following purposes and for no others: —

3 *First.* — Such as shall be necessary for its immediate
4 accommodation in the transaction of its business.

5 *Second.* — Such as shall be mortgaged to it by way of
6 security for loans made by it, as elsewhere herein provided.

7 *Third.* — Such as shall be conveyed to it in satisfaction of
8 debts contracted in the course of business dealings.

9 *Fourth.* — Such as it shall purchase at sale under judg-
10 ments, decrees, or mortgages or deeds of trust, held in the
11 bank, or shall purchase to secure debts due to it.

12 But no such bank shall hold the title and possession of any
13 real estate conveyed to or purchased by it to secure any debts
14 due to it for a longer period than five years.

ARTICLE VIII.

EXEMPTION FROM TAXATION.

1 Every farm-land bank incorporated under the terms of this
2 act, the land reserve fund or capital stock and surplus therein
3 and the income derived therefrom and the mortgages and
4 deeds of trust (and the notes and bonds secured thereby)
5 held by said bank and the farm-land bonds issued by the
6 bank shall be exempt from state and local taxation.

ARTICLE IX.

LAND RESERVE OR CAPITAL STOCK.

1 SECTION 1. The shares of stock or land reserve certificates
2 of any farm-land bank shall be in the form heretofore pre-
3 scribed and shall be of the par value of one hundred dollars
4 each, and each shareholder shall be entitled to one vote for
5 each share of stock standing in his name. No officer, clerk,
6 or employee of such bank shall act as proxy.

1 SECTION 2. The land reserve or capital stock of every
2 farm-land bank shall be paid in cash before it shall be au-
3 thorized to do a loaning business. But no shareholder shall
4 hold to exceed one tenth of the authorized capital stock.

1 SECTION 3. Any bank formed under this act may, by its
2 articles of association, provide for an increase of capital from
3 time to time, as may be deemed expedient, subject to the
4 limitations of this act. But the maximum of such increase
5 to be provided in the articles of association shall be approved
6 by the commissioner and no increase of capital shall be valid
7 until the total amount of such increase is paid in and until
8 notice thereof has been transmitted to the commissioner, who
9 shall thereupon issue to such bank his certificate, specifying
10 the amount of such increase of capital stock, with his ap-
11 proval thereof, and after it has been duly paid in, it shall be
12 treated as part of the capital stock of such association.

1 SECTION 4. Any bank formed under this act may, by the
2 vote of shareholders owning two thirds of its capital stock
3 reduce its capital to any sum not below the amount required
4 by this act to authorize the formation of such a bank; but
5 no such reduction shall be allowed which will reduce the
6 capital and surplus of the association below one twentieth of
7 its outstanding farm-land bonds as herein provided; nor shall
8 any such reduction be made until the amount of the proposed
9 reduction has been reported to and approved by the com-
10 missioner.

ARTICLE X.

BOARD OF DIRECTORS.

1 SECTION 1. The affairs of each bank shall be managed by
2 not less than six nor more than fifteen directors. All of said
3 directors shall be elected by the shareholders at a meeting to
4 be held before the association is authorized by the com-
5 missioner to commence business. Thereafter, two thirds of
6 said directors shall be chosen at meetings to be held on such
7 date in each year as is specified therefor in the articles of
8 association and by-laws. The directors shall hold office for
9 one year, and until their successors are elected and qualified.

1 SECTION 2. Borrowers on mortgage shall have representa-
2 tive membership on the board of directors on this basis; the
3 bank shall every year after its organization call a meeting of
4 the borrowers within convenient areas under rules prescribed
5 by the by-laws at which each borrower shall have one vote,
6 and the borrowers shall elect from their number the directors
7 to which they are entitled, who shall thereupon serve with
8 all the powers of directors elected by the holders of capital
9 stock.

1 SECTION 3. That every director must, during his whole
2 term of service, be a citizen of Massachusetts. Every
3 director except the directors chosen to represent the borrowers
4 must own, in his own right, at least five shares of the capital
5 stock of the bank of which he is a director. Any such
6 director who ceases to be the owner of five shares, or who
7 becomes in any other manner disqualified, shall thereby
8 vacate his office.

1 SECTION 4. That each director, when appointed or elected,
2 shall take an oath that he will, so far as the duty devolves on
3 him, diligently and honestly administer the affairs of such
4 bank, and will not knowingly violate or willingly permit to
5 be violated any of the provisions of this act, and when so
6 required, that he is the owner in good faith, and in his own
7 right, of the number of shares of stock required by this act,
8 subscribed for by him or standing in his name on the books
9 of the bank, and that the same is not hypothecated or in any

10 way pledged as security for any loan or debt. Such oath
11 subscribed by the director making it, and certified by the
12 officer before whom it is taken shall be immediately trans-
13 mitted to the commissioner and shall be filed and preserved
14 in his office.

1 SECTION 5. Any vacancy in the board shall be filled by
2 appointment by the remaining directors, and any director so
3 appointed shall hold his place until the next election.

1 SECTION 6. One of the directors, to be chosen by the
2 board, shall be president. One or more vice-presidents shall
3 likewise be chosen by the board. The clerk and treasurer
4 shall be elected by the shareholders. The duties of the
5 officers shall be set forth in the by-laws.

AUDITING COMMITTEE.

1 SECTION 7. An auditing committee consisting of three
2 members shall be elected at each annual meeting by the
3 shareholders.

1 SECTION 8. The board of directors shall appoint a com-
2 mittee of five who shall be known as the committee on loans.

ARTICLE XI.

PRIVILEGES GRANTED.

1 Farm-land bonds of any farm-land bank chartered here-
2 under shall be available for the following purposes: —

3 *First.* — They shall be legal investments for savings banks
4 to an amount not exceeding one fifth of their deposits and
5 income of any savings bank.

6 *Second.* — As a legal investment for trust funds and estates
7 under the charge of or administered by any of the courts of
8 the commonwealth.

9 *Third.* — As security for loans from trust companies to
10 farm-land banks or to individuals or corporations for not ex-
11 ceeding five years, to an amount aggregating not over twenty-
12 five per cent of the capital and surplus or to one third of the
13 time deposit of the trust company making such loans. Such
14 land reserve certificates and bonds shall be legal investments
15 for insurance companies.

16 *Fourth.* — The insurance commissioner, when in his opinion
17 the best interests of the policy holders of any insurance
18 company require the investment of any portion of the surplus
19 and reserve of such insurance company in Massachusetts real
20 estate or first mortgages thereon, may require such insurance
21 companies thus to invest such proportion of surplus and
22 reserve as he considers reasonable but not exceeding one per
23 cent of such surplus and reserve in any year. After hearing
24 and determining what proportion of assets are invested in
25 Massachusetts and what proportion should be so invested,
26 the insurance commissioner may under rules arranged by him
27 but not discriminatory against any company, order the invest-
28 ment in Massachusetts real estate or in lieu thereof, in farm-
29 land bank certificates or farm-land bonds and subject to the
30 above limitation, of a reasonable proportion of such surplus
31 and reserve. The supreme judicial court shall have juris-
32 diction in equity to review, annul, modify or amend any
33 ruling or order of such commissioner to the extent that the
34 same is unlawful.

1 SECTION 2. Such portion of the land reserve fund as the
2 directors think necessary may be invested in other securities
3 which are legal investments for savings banks, or may be
4 deposited subject to call among banks within this state.

ARTICLE XII.

COMMITTEE ON LOANS.

1 The committee on loans shall approve in writing an ap-
2 plication for a loan or advance before the same shall be
3 granted. Every application for a loan shall be made in
4 writing and shall state the purpose for which the loan is
5 desired. No loan may be made except as hereinafter pro-
6 vided unless the committee on loans is satisfied that it tends
7 to benefit the borrower and to develop agricultural resources,
8 nor unless it has received the approval in writing of a ma-
9 jority of the members of the committee; but an applicant for
10 a loan may appeal to the board of directors who are hereby
11 given authority to make such loans.

ARTICLE XIII.

AUDITING COMMITTEE.

1 SECTION 1. The auditing committee shall inspect the
2 securities, cash and accounts of the corporation, and supervise
3 the acts of its board of directors, committee on loans, and
4 officers. At the expense of the corporation, the auditing
5 committee shall employ chartered accountants to audit the
6 books, records and accounts, and may do so without previous
7 notice to the directors or officers and with such frequency and
8 at such times as they deem best. At the annual meeting of
9 the members, the auditing committee shall submit their report
10 to the members, including the results of said audit, together
11 with such recommendations as they have to offer, with an
12 epitome of their proceedings since the last previous meeting
13 of the members. At any time, the auditing committee, by
14 unanimous vote, may suspend the committee on loans or any
15 member thereof, or any director or officer; and by a majority
16 vote may call a meeting of the members to consider any
17 violation of this act or of the by-laws, or any practice of the
18 corporation which in the opinion of said committee is un-
19 authorized. Within seven days after the suspension of one
20 or more trustees or officers or members of the committee on
21 loans, the auditing committee shall cause notice to be given
22 of a meeting of the members to take such action relative to
23 such suspension as may be necessary. The auditing com-
24 mittee shall fill vacancies in their own number until the next
25 annual meeting.

1 SECTION 2. The commissioner shall require an annual
2 report of such bank in such form as he shall prescribe and
3 shall cause the same to be published in a newspaper or news-
4 papers published in the vicinity where the bank is located.

1 SECTION 3. The auditing committee in the absence of
2 provisions in the by-laws, by general rules and regulations,
3 shall prescribe the method of keeping the mortgage register;
4 of holding and preserving the mortgages and the bonds
5 secured by deed of trust, of crediting payments on mortgages,
6 of canceling mortgages, and of releasing the liens of mortgages.

1 SECTION 4. The auditing committee shall at such exami-
2 nations ascertain that all mortgages, deeds, assignments, and

3 other evidence of real estate titles have been duly recorded in
4 the county where the property is situated, and in the event of
5 failure on the part of the officers to record any such in-
6 strument the auditing committee shall certify such fact upon
7 the records of the bank and the officers shall be liable for any
8 damage suffered from such negligence.

ARTICLE XIV.

SURPLUS AND DIVIDENDS.

1 SECTION 1. From the earning of the farm-land bank shall
2 first be paid the interest upon bonds outstanding, or upon any
3 unpaid accumulation thereof. Thereafter a dividend upon
4 the bank's outstanding land reserve certificates may be paid
5 at a rate not exceeding three per cent per annum. Net
6 earnings in excess thereof are to be carried to surplus, until
7 such surplus reaches twenty-five per cent of the land reserve
8 certificates then outstanding. Then any arrears of dividend
9 may be paid to make up the three per cent annual cumu-
10 lative dividend hereinbefore authorized, but without interest
11 upon said accumulations. Thereafter dividends may be paid
12 to an amount not exceeding six per cent for any year upon the
13 par value of the shares: *provided*, that in no case shall any
14 dividend be paid which will impair the capital stock of the
15 bank, nor shall any dividend be paid which will reduce the
16 amount of capital and surplus to less than one twentieth of
17 the balance due upon the outstanding bonds of the bank.

1 SECTION 2. The remaining profits shall be divided as
2 profit-sharing dividends in the following manner: The
3 borrowers of record at said date shall be credited with five
4 eighths, the bonds then outstanding shall be credited with two
5 eighths (payable upon retirement of the bond), and the share-
6 holders shall be paid one eighth of such profits. Upon failure
7 to pay such profit-sharing dividend, the bank commissioner
8 may compel such division.

ARTICLE XV.

DIRECTORS' MEETINGS.

1 The directors of each farm-land bank shall meet at least
2 once in each month, and at such other times as are necessary.
3 They shall have power to appoint committees and to delegate
4 to such committees such portion of their powers as may be
5 necessary for the convenient operation of the bank.

ARTICLE XVI.

LOANS MAY BE PAID WITH FARM-LAND BONDS OF SAME SERIES
— BANK MAY BUY ITS FARM-LAND BONDS AND HAVE CORRE-
SPONDING AMOUNT OF MORTGAGES RELEASED.

1 Any borrower shall be entitled to pay off the amount of his
2 mortgage or any portion thereof by presenting to the bank,
3 on any interest period after five years from date thereof the
4 bonds of the same series as those issued against his mortgage.
5 To the extent of such bonds presented and canceled at such
6 time, the borrower shall be relieved of his mortgage indebted-
7 ness and proper credits shall be made upon his mortgage.
8 The bank issuing such bonds shall also have the right at any
9 time to buy in the open market its bonds and to cancel the
10 same, and thereupon to release a proportionate amount of the
11 mortgages securing such bonds. But in case any of such
12 bonds are called for payment by the bank as hereinbefore
13 provided, then the same must be paid off by the bank at par,
14 plus interest and accumulated profits.

ARTICLE XVII.

GENERAL PROVISIONS.

Insurance.

1 SECTION 1. The dwelling house, barns and other buildings
2 on the mortgaged property shall be insured against fire to a
3 reasonable amount before any loan shall be made. In the
4 event that any insurance company shall refuse to insure such
5 buildings, the insurance commissioner may upon the com-
6 plaint of the farm-land bank investigate the matter. If he
7 finds that the attitude of the insurance company is dis-
8 criminatory against the owner of the premises, he shall make
9 an order accordingly and the insurance company shall before
10 writing other risks insure the property upon reasonable terms.
11 The supreme judicial court shall have jurisdiction in equity
12 to modify or annul any such order of the insurance com-
13 missioner.

1 SECTION 2. All matters relating to the organization and
2 operation of banks created under this act shall be under the
3 direction and control of the banking commissioner who shall
4 furnish, upon request, free of cost, all the blanks required to
5 organize the farm-land bank or banks herein provided for.

1 SECTION 3. Any banks created hereunder may be dissolved
2 and this law as affecting any bank may be changed by special
3 act of the legislature. Such bank may by a two thirds vote
4 of its shareholders and upon receiving permission from the
5 bank commissioner dissolve of its own initiative.

1 SECTION 4. In case of the dissolution of any corporation
2 created under this act, the assets shall be distributed as
3 follows; after the payment of all debts and expenses, the par
4 value of the shares of stock with so much interest as is
5 cumulative shall be paid to the shareholders; the balance shall
6 be distributed five eighths to borrowers whose mortgages are
7 unpaid in such proportion as the average of the indebtedness
8 of each for the preceding five years bears to the total loans
9 of such bank, two eighths to those then owning bonds of such
10 bank and one eighth to the shareholders. In the event that
11 the original borrower has sold the premises mortgaged and
12 the purchaser has assumed the mortgage, the owner of the
13 title shall by such assuming of the mortgage succeed to the
14 rights of the borrower to participate in such distribution.
15 In the event that any bank is dissolved within five years of
16 its formation, then all borrowers or their successors in title
17 shall share in said five eighths in such proportion as the loan
18 of each bears to the total loans made by said bank.

ARTICLE XVIII.

PENALTIES.

1 Any officer, clerk, or agent of any farm-land bank herein
2 described, who commits any offense or malfeasance, or who
3 shall intentionally violate any provisions of this act or of the
4 banking acts of this state or any person who shall without
5 right use the name "Farm-land Bank", shall be punished by
6 a fine of not more than five thousand dollars, or imprison-
7 ment of not more than three years.

ARTICLE XIX.

1 Chapter four hundred and thirty-seven of the acts of the
2 year nineteen hundred and fourteen is hereby repealed.

ARTICLE XX.

1 This act shall take effect upon its passage.

SUGGESTED AMENDMENTS.

The Commission suggests as desirable the following amendments to chapter 419 of the Acts of 1909: —

I.

That section four of chapter four hundred and nineteen of the acts of the year nineteen hundred and nine be amended by inserting after the word “union”, in the fifth line, the following: — or the three words “farmers’ credit bank”, — so that said section will read as follows: — *Section 4.* No person, partnership, association or corporation, except corporations formed under the provisions of this act, shall hereafter transact business under any name or title which contains the two words “credit” and “union”, or the three words “farmers’ credit bank.” The provisions of section seventeen of chapter five hundred and ninety of the acts of the year nineteen hundred and eight shall apply to, and as prescribed therein proceedings shall be brought against, any person, partnership, association or corporation which violates the provisions of this section.

II.

That section ten of said chapter four hundred and nineteen be amended by adding at the end thereof the following new paragraph: —

(g) To determine the rate of interest which shall be charged on loans.

III.

That section thirteen of said chapter four hundred and nineteen be amended by adding at the end thereof the words: — A natural person or a co-operative corporation organized under the provisions of chapter one hundred and ten, Revised Laws, may be a shareholder. No member may hold more than one hundred shares, — so as to read as follows: — *Section 13.* The capital of the corporation shall be unlimited in amount. Shares of capital stock may be subscribed for and paid in in such manner

as the by-laws shall prescribe. A natural person or a co-operative corporation organized under the provisions of chapter one hundred and ten, Revised Laws, may be a shareholder. No member may hold more than one hundred shares.

IV.

That section fifteen of said chapter four hundred and nineteen be amended by adding at the end thereof the words: — or may be partly invested in the land reserve certificates or bonds of any farm-land bank as hereinbefore provided, — so as to read as follows: — *Section 15.* The capital deposits and surplus funds of the corporation shall be either lent to the members for such purposes and upon such security and terms as the credit committee shall approve, or deposited to the credit of the corporation in savings banks or trust companies incorporated under the laws of this commonwealth, or in national banks located therein, or may be partly invested in the land reserve certificates or bonds of any farm-land bank as hereinbefore provided.

V.

That section seventeen of said chapter four hundred and nineteen be amended by adding in the fourth line after the word “committees”: — and no member of such board or committee shall pass upon any loan to himself, — and by striking out the words “borrow from or”, in the fifth and sixth lines, — so as to make said section read as follows: — *Section 17.* No member of the board of directors or of the credit or supervisory committee shall receive any compensation for his services as a member of said board or committees, and no member of such board or committee shall pass upon any loan to himself, nor shall any member of the credit or supervisory committee, either directly or indirectly become surety for any loan or advance made by the corporation. But the officers elected by the board of directors may receive such compensation as said board shall authorize.

VI.

That section nineteen of said chapter four hundred and nineteen be amended by adding at the end thereof the words: — The directors shall decide how much, if any, accrued interest shall be paid upon withdrawals. The shares in and deposits of any credit union or farmers’ credit bank shall not be taxable. The state bank commissioner shall furnish upon request, free of

cost, the forms, blanks, information and instruction necessary to enable the people interested to organize the farmers' credit banks or credit unions herein provided for, — so as to read as follows: — *Section 19.* The amounts paid in on shares or deposited by members who have withdrawn or have been expelled shall be paid to them, but in the order of withdrawal or expulsion and only as funds therefor become available and after deducting any amounts due by said members to the corporation; but such expulsion shall not operate to relieve a member from any remaining liability to the corporation. The directors shall decide how much, if any, accrued interest shall be paid upon withdrawals. The shares in and deposits of any credit union or farmers' credit bank shall not be taxable. The state bank commissioner shall furnish upon request, free of cost, the forms, blanks, information and instruction necessary to enable the people interested to organize the farmers' credit banks or credit unions herein provided for.

COMMUNICATIONS.

FROM UNITED STATES ATTORNEY GEORGE W. ANDERSON.

OFFICE OF UNITED STATES ATTORNEY,
DISTRICT OF MASSACHUSETTS, FEDERAL BUILDING,
BOSTON, Nov. 12, 1914.

GENTLEMEN: — Referring to the western trolleys matter, I have to say that on November 5th I wrote to the Attorney-General as follows: —

A copy of Chapter 146 of the Resolves of Massachusetts for the year 1914 is hereto attached. In substance this Resolve refers to a special Commission the consideration of the so-called western trolley question. Yesterday, the legal members of this Commission interviewed me as being in their view a representative of the United States Department of Justice, pursuant to that part of the Resolve which requires the Commission to consult "with the United States Department of Justice as to the legality of the different plans considered by the Commission for the development of the said section and as to the views of said department with respect to the adoption by this Commonwealth of any particular policy of legislation which the Commission may be disposed to recommend in regard to any of said matters and also in regard to the sale or disposition of any stock of the Berkshire Street Railway Company acquired by the New York, New Haven and Hartford Railroad Company under authority of chapter six hundred and one of the acts of the year nineteen hundred and ten."

The Commission presented informally three general queries: —

First. — As to whether the Department of Justice regards the continued holding by the New Haven of the Berkshire lines, and further development thereof pursuant to Chapter 765 of the Acts of 1913, as a course of conduct obnoxious to the Sherman Act.

I directed their attention to the provision in the decree entered in the pending case, requiring the selling of the Berkshire stock within the next five years, as furnishing an indication that the Department would regard any continued control of the Massachusetts trolleys as obnoxious to the Sherman Act, but stated that I ought to submit that question to the Department.

Second. — The Commission further inquired whether the Department would regard a purchase by the Commonwealth of Massachusetts of some or all of these trolleys, and a subsequent consolidation of the Berkshire trolleys with the Springfield and the Worcester Consolidated, one or both, as obnoxious to the Sherman Act.

Third. — The third query was as to whether, if the New Haven should divest itself entirely of the Berkshire stock, as provided by the present decree, the Department would regard the subsequent consolidation of the Berkshire with the Springfield and the Worcester Consolidated, one or both, as obnoxious to the Sherman Act.

On the last two points, I ventured to say to the gentlemen that as Public Service Commissioner of Massachusetts, I dealt with the Department concerning the application of the Sherman Act to the New England railroad situation, and my views were that the Department would not regard a proceeding under either of the plans suggested in queries 2 and 3 as calling for any condemnation from the Department under the terms of the Sherman Act.

To Summarize, it seems to me reasonably clear that the Department is committed to requiring a divorce of the trolleys from the New Haven system, but that there is no objection to the Commonwealth's developing the trolleys as it chooses, at any rate so long as the Commonwealth does not own or operate any of the railroads, nor can I see any reason why the Sherman Act should be held to prevent a consolidation with other trolleys reaching east as far as Worcester. Indeed, such consolidation is, so far as the trolleys themselves are concerned, mainly, if not entirely, an extension of lines and not a consolidation of competing lines. It is true that the Berkshire runs into Vermont, and I think New York, and that the Worcester Consolidated has, as I recall it, certain lines running into Connecticut, so that interstate commerce is involved. But the same thing is also true of previous consolidations making up the present Bay State Company, whose lines now run from southern New Hampshire to Newport, Rhode Island. I do not think it can be seriously or soundly contended that either the consolidation of the Bay State or the suggested consolidation of the Berkshire, Springfield and Worcester would be obnoxious to the Sherman Act.

Awaiting your instructions, I am

Respectfully,

(Signed)

GEORGE W. ANDERSON,
United States Attorney.

Under date of November 10th, I have the following reply: —

GEORGE W. ANDERSON, Esq., *United States Attorney, Boston, Massachusetts.*

DEAR ANDERSON:—I received yours of the 5th and agree generally with your views thereon expressed.

I answer specifically, however, the three questions asked as follows: —

To the first: I answer yes, as indicated by the decree.

To the second: I see no objection to the purchase by the Commonwealth of Massachusetts of some or all of the Berkshire trolleys and a subsequent consolidation by the Commonwealth of such trolleys so acquired with the

Springfield and Worcester trolleys, provided the Commonwealth does not own or control lines competing with these systems or a portion thereof.

To the third: In case the New Haven divests itself entirely of the Berkshire stock as provided by the decree, I see no reason why the purchaser of the Berkshire lines should not consolidate them with the Springfield and Worcester trolleys, provided such purchaser does not own or control competing lines.

Faithfully yours,

(Signed)

T. W. GREGORY.

In general, this indicates that the Department's attitude is what I told you I thought might be expected.

I acknowledge receipt of Mr. Warren's article on the Berkshire trolleys, and am glad you found it of value.

Very truly yours,

(Signed)

GEO. W. ANDERSON,

United States Attorney.

FROM NEW YORK, NEW HAVEN & HARTFORD RAILROAD CO.,
HOWARD ELLIOTT, PRESIDENT.

THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY,

OFFICE OF THE PRESIDENT,

AT BOSTON, MASS., December 4, 1914.

Commission to Consider the Improvement of Transportation Facilities in the Commonwealth, Springfield, Massachusetts.

GENTLEMEN:—Your letter of November twenty-fifth, addressed "New York, New Haven & Hartford Railroad Co., and Berkshire Street Railway Co., Howard Elliott, Pres. of said Companies and Directors thereof" was duly received, and also a letter of like date, addressed to me as President of the "New York, New Haven & Hartford Railway Co." and President of the "Berkshire Street Railway Co." In the latter letter you ask that a detailed answer be given to the former letter within ten days, or by December fifth.

The time allowed by you has not permitted submission of this question to the Boards of Directors of the respective companies, and this answer, therefore, is made by me as President, after consulting with such Directors as I have been able to reach and after consulting the operating officers of the New Haven Company, Vice-Presidents Buckland and Tomlinson, and Mr. Farnham, Counsel of the Company for Massachusetts, and with Mr. Storrs, Vice-President of the Berkshire Company. These four

gentlemen are more familiar with the past history of the Berkshire Company than I am.

For convenience, I quote the questions propounded by you and give the answer immediately following each question, and at the end of the letter I state some general reasons why, in my judgment, the answers are the proper ones for the Company to make.

(1) Do you intend to accept, and comply with, the provisions of Chap. 765 of Acts of Massachusetts General Court of 1913, and build the trolley extensions referred to therein?

Answer: Neither the New Haven nor the Berkshire Company intend to build the trolley extensions referred to.

(2) If not, why not?

Answer: The reasons for the answer given to Question No. 1 will be given at the close of this letter.

(3) In the event of the decree of the Federal Government being modified so as to allow the New York, New Haven & Hartford Railroad to retain its control of the stock of the Berkshire Street Railway Company, would you be willing to build the extensions referred to in said Act, insofar as they are connected with the Berkshire Street Railway Company, and provided that you were relieved of the obligations to construct any other lines under said Act, and provided further that you were relieved of the expenditure of \$5,000,000 as declared by the said Act?

Answer: Neither the New Haven nor the Berkshire Company could undertake to build any of the extensions referred to.

(4) If not, why not?

Answer: The reasons for the answer given to Question No. 3 will be given at the close of this letter.

(5) What modification of existing laws of the Commonwealth of Massachusetts would you desire as a condition precedent to making said extensions?

Answer: Neither the New Haven nor the Berkshire Company suggest any modification of existing laws as neither company is competent to build any extensions.

(6) In the alternative that the New York, New Haven & Hartford Railroad and the Berkshire Street Railway Company are unable to proceed further in making trolley extensions, and the Commonwealth would see fit to build any or all of the extensions in so far as they would affect the Berkshire Street Railway Company, as referred to in Chap. 765 of Massachusetts Acts of 1913, what, if any, traffic agreement would you make with the Commonwealth to operate such extensions?

Answer: Should the Commonwealth of Massachusetts decide to build some of the extensions referred to that may be in territory fairly tributary to the New Haven Company, I should be willing to recommend to the Berkshire Company and the New Haven Company that "a traffic agreement to operate such extensions" be made on the following basis: —

The Berkshire Company to operate such extensions severally under a yearly contract under which it would act as an agent for the Commonwealth but with no obligation to provide electric current or equipment beyond what it may have available for the purpose in its judgment in excess of the requirements of the present Berkshire Company.

The Berkshire Company not to be responsible for any taxes nor for any expenses beyond operating expenses in excess of the receipts from operation and not to be responsible for claims of any character except such as may result from its own negligence.

Each extension to be treated separately and the Berkshire Company to have the right to cancel the yearly arrangement as to any extension at the termination of any year by giving six months' notice prior to the end of such year if, in its judgment, such extension will not earn a sufficient amount to permit the proper maintenance and operation for the next year.

The Berkshire Company to be paid a reasonable sum for acting as such agent and such sum to be a part of the operating expenses of each extension.

(7) Provided that all legal objections, if any, to making such sale were removed, would the New York, New Haven & Hartford Railway Co. be willing to sell all its stock in the Berkshire Street Railway Co. to the Commonwealth, and if so, at what price, the Commonwealth to have a four months' option to purchase from January 1st, 1915?

Answer: I do not feel that I can commit the Company in regard to selling the stock of the Berkshire Street Railway Company now belonging to the New Haven Company, to the Commonwealth of Massachusetts.

My own view is that the Company would be willing to enter into a negotiation with the proper parties representing the Commonwealth, with the idea of making a sale, and that upon reasonable terms a four months' option would be given to the Commonwealth.

In regard to the general situation, I wish to state that I regret extremely that general legal and financial conditions have arisen since negotiations began in regard to the so-called "Western Trolley Development" that have changed entirely the

situation and that make it necessary for the New Haven Company to take the position outlined in the answers to your several questions.

The decree of the Federal Court provides: —

Sixth. The 53,981 shares of the capital stock of the Berkshire Street Railway Company and the 6,500 shares of the capital stock of the Vermont Company owned by the New Haven Company shall be sold before July 1, 1919; provided however such sale shall not be proceeded with until action shall have been taken by the Commonwealth of Massachusetts authorizing a sale of the shares of the Berkshire Street Railway Company or until this court on the application of any party and after a hearing at which the Commonwealth of Massachusetts shall be invited to appear shall by further order so direct. If the Berkshire Street Railway Company shall acquire the securities or properties of the New England Investment & Security Company, then the stocks and other securities of the Berkshire Street Railway Company and the Vermont Company owned by the New Haven Company forthwith shall be vested in three trustees (to be agreed upon by the Attorney General and the New Haven Company or appointed by the Court in case of the failure to so agree) who shall hold and sell the same upon terms and conditions similar to those provided in section Third of this decree in relation to the stock of the Connecticut Company.

Under these circumstances, it does not seem right for the New Haven Company to add to the mileage of these properties but simply to care for the present trackage as well as it can until such time as some disposition may be made of the property.

The general financial condition of the Berkshire Company and of the New Haven Company is such that neither company is in a position to borrow any money for additions, betterments and improvements or for large construction expenditures for new extensions.

Therefore, because of all of the conditions outlined, I feel obliged to send you this letter, with the further statement that I will submit it to a meeting of the Executive Committee of this Company on December eighth and to a meeting of the Board of Directors on December seventeenth, and advise you promptly what position they take in regard to the sale of the property and whether they desire to make a reply to your questions along any different lines.

Yours respectfully,

(Signed) HOWARD ELLIOTT,
President.

FROM BOSTON & ALBANY RAILROAD, H. M. BISCOE, VICE-PRESIDENT.

BOSTON & ALBANY RAILROAD, N. Y. C. & H. R. R.R. Co., LESSEE,
BOSTON, MASS., December 14, 1914.

GENTLEMEN: — Referring to yours of the 11th inst.

The questions you ask are such as would be usually decided by the Board of Directors after full knowledge of the circumstances in each case. I feel quite sure, however, that I correctly state their views in making the statement, that this Company would not be inclined to build or operate trolley lines in Western Massachusetts.

Yours truly,

(Signed) H. M. BISCOE.

WITH NEW ENGLAND INVESTMENT AND SECURITY COMPANY,
J. T. HARMER, PRESIDENT.

NOVEMBER 25, 1914.

*New England Investment & Security Company, J. T. HARMER,
President, and Directors thereof.*

DEAR SIRs: — It is the desire of the Commission, appointed by His Excellency, Governor Walsh, to investigate the trolley situation in Western Massachusetts to secure from you official, definite information of the attitude of your Company upon the following subjects: —

(1) What will be the cost of the construction of a trolley line, with suitable turnouts, etc., from Huntington to Cummington?

(2) Will your Company build and operate such a line?

(3) If not, please state your objections thereto.

(4) If the Commonwealth should build the road, would your Company equip, maintain and operate it, for a period of, say, ten years, and at the end of such period, take over the interest of the Commonwealth in said road, upon such terms as would be agreed upon by a Commission consisting of a representative of your Company, a representative of the Commonwealth and the Chief Justice of the Supreme Judicial Court of the Commonwealth?

(5) Upon what terms and conditions, if any, would you maintain and operate this road if built by the Commonwealth?

Respectfully submitted,

WESTERN MASS. TRANSPORTATION COMMISSION,
(Signed) By THOMAS J. COLLINS,

Clerk.

NEW ENGLAND INVESTMENT & SECURITY COMPANY,
MASSACHUSETTS MUTUAL BUILDING,
SPRINGFIELD, MASS., December 8, 1914.

GENTLEMEN: — I am enclosing herewith reply of the New England Investment and Security Company of this date, to the formal inquiries of the Western Massachusetts Transportation Commission of November 25th, transmitted to me with your favor of the same date.

Very truly yours,
(Signed) J. T. HARMER,
President.

DECEMBER 8, 1914.

Honorable Commission to Consider the Improvement of Transportation Facilities in the Commonwealth, Hampden County Court House, Springfield, Mass.

GENTLEMEN: — Your favor of November 25th, addressed to the New England Investment & Security Company and asking certain questions with respect to the construction and operation of a trolley line from Huntington to Cummington, was duly received on November 27th.

The New England Investment & Security Company is merely a holding or investment company, and cannot, therefore, itself either construct or operate trolley lines in this Commonwealth. It, however, controls substantially all the stock of the Springfield Street Railway Company, and for that reason is deeply interested in the development of the resources and in the increase of the population and prosperity of the large section of the Commonwealth which would be served by the construction of such a line as you mention. Owing to the fact of this association's stock control of the Springfield Street Railway Company, it may not, therefore, be improper for this association to reply to your inquiries, keeping in mind, however, that any definite and final contract in line with the 4th and 5th inquiries of your communication would, of course, have to be made between the Springfield Street Railway Company and the Commonwealth as the parties to the contract. With this explanation of the relations between this association and the street railway company, this association is glad to reply to your inquiries as follows: —

“1. Will you kindly furnish the Commission with an estimate of the cost of the trolley line, with suitable turnouts, etc., from Huntington to Cummington?”

Answer to 1. — As you will appreciate, it would be impossible for us to obtain an estimate such as you desire without such a long delay in our answer as to make it unavailable within the time when you desire to make your report to the General Court. We understand, however, that in connection with the proposal of the late William A. Whittlesey and others to build a line between Huntington and Cummington, for which a charter was granted to them in 1903 (see Statute 1903, chapter 346), a survey was made, and the cost of the line, built with 70-pound Tee rails, was estimated at \$650,000. We have no copy either of the survey or of the estimate, but are under the impression that it covered the cost of roadbed, track, right of way, bridges and overhead construction. So far as the estimate represented the cost of labor and materials, its amount at the present time, owing to the greater cost of materials and labor, would probably exceed by not less than 25% that of twelve years ago. To the extent, however, that the estimate was based upon the cost of right of way, it would seem as if no addition on account of that item would be necessary. Indeed, if the Commonwealth were to build the line, it would seem not unreasonable to expect, and perhaps to require, that the right of way should be contributed by the owners of the land through which the line passed, or should be acquired by the towns benefited by the construction. It is our understanding that the estimate included nothing for rolling stock or for power supply. An independent power development for the proposed line would probably cost not less than \$100,000, which would be additional to the estimate given above. As, however, there are two large hydro-electric power companies in Western Massachusetts, either of which would probably be glad to furnish, at reasonable rates, under a long contract, the necessary power for the operation of the proposed line, it would seem unnecessary to include in the estimate any capital expenditure for an independent power plant. If power were purchased, its cost would then be included in the operating expenses of the line.

“2. Will your Company build and operate such a line?”

Answer to 2. — For reasons stated in answer to your third inquiry, the Investment Company could not favor the construction by the Springfield Street Railway Company of the line between Huntington and Cummington suggested in your communication.

“3. If not, please state your objections thereto.”

Answer to 3. — An operating company, serving such a territory as that in which the lines of the Springfield Street Railway Company are operated, is constantly under the necessity of responding, so far as its ability to obtain necessary capital will permit, to the demand for extensions and for additional facilities which the growth of its territory reasonably requires. There are at the present time numerous extensions desired by the patrons of the Company, all of which it is not financially able to provide, and the most pressing of which will call for as great a capital expenditure as it can hope successfully to make within the next few years.

The projected line is not, in our opinion, one upon which the traffic would at present, or for some years to come, be sufficient to meet its operating expenses, and the fixed charges.

We do not mean by this statement to imply an opinion that the line ought not to be built. Its construction and maintenance seem to us, however, analogous to the construction and maintenance of state highways and park reservations. The public benefits of such improvements, although accompanied in many cases by no financial return and in other cases only by an indirect financial return to the Commonwealth and its citizens as a whole, seem fully to have justified the expenditures. A private corporation, however, primarily organized to return a reasonable profit to those investing their money in it, and dependent upon showing that reasonable profit to enable it to secure additional investments of capital, cannot properly be influenced by such considerations. Indeed, in order to justify its charges to the public for the service rendered by it, some authorities hold that the company must be prepared to show that its capital has been invested "with reasonable prudence." In its opinion in the Middlesex & Boston Rate Case (P. S. C. 553) the Commission lays down this principle in the following language: —

If the Commission finds a street railway company investing money in building extensions contrary to the dictates of reasonable prudence and sound business judgment, it is its plain duty to refuse any, or at any rate a full return upon such investment.

In some jurisdictions the construction of developmental lines is encouraged by a body of law or recognized practice sanctioning a liberality respecting capitalization which does not prevail in this Commonwealth. Under our statutes capitalization is strictly confined, not alone to actual cost of property necessary

to a public utility, but to even a less amount than such actual cost, if, in the opinion of the supervising board or commission, such actual cost exceeds the amount deemed by the Commission reasonable. As regards street railways, the return upon the capital stock, if the enterprise proves successful, is practically limited to 8% per annum on the par value of the Capital Stock (see St. 1906, Ch. 463, Part III., Sec. 130). In case of companies already established and conducting a prosperous business, this limitation often necessitates the acceptance of even a lower return than 8%, because of the statutory provision for the issue of additional stock at a price above par (see (St. 1906, Ch. 463, Pt. III., Sec. 111; St. 1908, Ch. 636, etc.). Without in any way questioning the wisdom of these statutes for a community, in general so densely settled as is Massachusetts, their provision hold out no inducement to a company to assume the risk of making investments which do not promise a reasonably prompt return. If the investment proves successful, the stockholders receive only a moderate return for the risk they have taken, while, if the venture proves unsuccessful or requires a long period for the development of a profitable business, it may yield no return and may even compel a diminution upon the return of the previously invested capital.

The possibility of the assumption by the public of ownership of existing lines is a further deterrent to the investment of private capital in an extension not likely to prove immediately profitable.

Finally, the wide divergence of view entertained respectively by many of the rate regulating tribunals on the one hand, and common carrier corporations on the other hand, as to the propriety of increasing the rates charged by the latter to meet the greater operating costs resulting from higher wages to employees and higher prices for materials, must, until reconciled, render it difficult, if not impossible, for the common carrier corporations to secure additional capital for any expenditures other than those most obviously pressing and necessary.

"4. If the Commonwealth should build the road, would your Company equip, maintain and operate it, for a period of, say, ten years, and at the end of such period, take over the interest of the Commonwealth in said road, upon such terms as would be agreed upon by a Commission consisting of a representative of your Company, a representative of the Commonwealth and the Chief Justice of the Supreme Judicial Court of the Commonwealth?"

“5. Upon what terms and conditions, if any, would you maintain and operate this road if built by the Commonwealth?”

It is not easy definitely to answer either of these questions in the absence of more exact information as to the character of the construction and route of the proposed railway than we at present possess. We appreciate, however, the desire of the Commission for some statement as to the possibility of effecting an arrangement with some street railway company for the operation of the proposed line and for its possible purchase. We desire, so far as we may be able to do so, to aid the Commission in its investigation and in reaching, if possible, a result which will secure the desired facilities in the area of approximately four hundred square miles west of the Connecticut River and north of the Boston & Albany Railroad, at present lacking in transportation lines of any kind. This association has, therefore, annexed to this communication an alternative statement roughly outlining an arrangement either (1) for the operation of the proposed line by the Springfield Company as agent of the Commonwealth, or (2) for the operation and subsequent purchase of the proposed line by the Springfield Company, either of which, as the Commonwealth might prefer, this association would favor having the Springfield Company undertake to incorporate in a contract between that Company and the Commonwealth. This alternative proposition is not intended itself to state the terms of the proposed contract, but only to indicate a general outline of what seemed to us the more important and necessary features of any arrangement that might be made. If either alternative of the proposition seems to your Honorable Commission worthy of further consideration, we shall be glad at any time to arrange, at the convenience of the Commission, for a conference between some executive officer and counsel of the Springfield Street Railway Company and your Commission for the purpose of explaining or amplifying the proposition, and, if practicable, of settling as many as possible of its details.

NEW ENGLAND INVESTMENT AND SECURITY COMPANY,

(Signed)

By J. T. HARMER,

President.

Tentative Alternative Plan (1) for the Operation by Springfield Street Railway Company as Agent of the Commonwealth, or (2) for the Operation and Subsequent Purchase by said Company of a Proposed Line of Electric Railway from Huntington to Cummington, to be constructed by the Commonwealth, from a Connection with Said Springfield Company's Present Terminus in the Southerly Part of the Town of Huntington to a Convenient Terminus in the Village of Cummington, a Distance of about Fourteen Miles.

Assuming the construction of the roadbed and track, equipped for operation by the same method of overhead electric motive power as that now employed by the Company, and upon an alignment, and with curves and grades, to be mutually agreed upon between representatives of this Company and of the Commonwealth, before construction is begun, as capable of operation, reasonably economical to the Company and satisfactory and safe for the public, the New England Investment & Security Company, as controlling substantially all the stock of the Springfield Street Railway Company, would favor having the Springfield Street Railway Company undertake either: —

(1) To maintain and operate said line of railway (the Commonwealth providing the necessary rolling stock therefor of a style and construction satisfactory to the Company) for account of and as agent for the Commonwealth, rendering monthly statements to the representatives of the Commonwealth of the receipts and expenditures resulting from such operation, and settling with the Commonwealth semi-annually as of the first days of January and July in each year for the results of such operation, the details of accounts to be agreed upon, and the method of apportioning any receipts and expenditures not clearly relating solely to said line of railway, to be fixed, by agreement before the execution of the contract by the Springfield Company, with a suitable provision for determining by arbitration any disputed items or principles of accounts during the life of the contract, the rates of fare and extent and character of service to be determined from time to time by the Commonwealth or its representatives, the Company making, however, no charge for its services or the services of its general officers, managers or superintendents, in the operation of the proposed line of railway, until such operation has been continued for a period of five years. At the expiration of said period of five years, or as soon

and to such extent thereafter as the earnings of said line of railway shall exceed the operating expenses thereof, the Springfield Company shall be paid, for its services in operating the same, such proportion of its total overhead expenses, including cost of superintendence and salaries, as the gross operating expenses of said line of railway bear to the total gross operating expenses of the Company, and in addition to such payment shall be entitled to receive as compensation for its services in operating such line of railway an amount equal to ten per cent. of the annual gross operating revenues of said line of railway. The contract for such operation of said line of railway by the Springfield Company shall be for such period not less than fifteen years as the Commonwealth may determine, and if for a period of not more than twenty years shall be subject to extension at the option of the Commonwealth for a further term of the same number of years as that first fixed. Should the Commonwealth prefer, the Springfield Company shall supply the necessary rolling stock, and in that case shall include in the operating expenses, to be reimbursed to it by the Commonwealth, interest and depreciation on the cost of the rolling stock furnished by the Company.

(2) To operate, at the Company's own expense, during a period of fifteen years, said line of railway and to furnish and maintain the necessary rolling stock for such operation upon substantially the following basis: —

Maintenance and Taxes. — The Commonwealth shall assume the expense of maintaining and keeping in repair the railway and overhead equipment of the proposed line of railway, and all taxes assessed thereon or payable therefrom, or upon the operation and revenue therefrom, during said period of fifteen years.

Rates of fare for passengers shall not, without the consent of the Company, be reduced below five cents as a minimum fare, nor below the rate of two cents for each mile and fraction thereof, for any trip in excess of two miles in length, except that school children not over 17 years old, attending the regular graded public schools, or graded private schools, recognized by the Commonwealth as giving substantially similar and equivalent education to that of the regular public schools, shall be entitled to transportation at half the rates established for other passengers, the minimum rate, however, for such school children to be not less than two and one-half cents, and such reduced rates to be available only through the purchase of tickets in lots of not less than ten each, upon such terms and subject to such reasonable

regulations and restrictions as to the purchase and use of said tickets as may from time to time be established by the Company and approved by the Public Service Commission.

The passenger service required of the Company shall not exceed service upon such a schedule, during the period of each year between April 15th and October 15th, as the Public Service Commission shall, from time to time, determine may be reasonably and safely maintained with the equivalent of two cars operating between the termini of the proposed line of railway, and shall not exceed, in the period prior to April 15th and after October 15th in each year, such service as said Commission shall determine may be reasonably and safely maintained with the equivalent of one car operating between said termini; nor shall service be required to be furnished over a longer period of time in any one day than eighteen hours, including, as a part of said eighteen hours, any time necessary to operate cars between the place where they are usually kept when not in use and the point or points on said line of railway at which their regular trips are scheduled to begin and end, respectively; nor shall the Company, at any time, be required to operate a car on any part of said line between midnight of one day and five in the morning of the next day.

Accidents. — The Company shall be responsible for all injuries and damages resulting from accidents in the operation of said line of railway, except such only as result from a defective condition or lack of repair of said line of railway, of which defect or lack of repair the Commonwealth shall have been notified by the Company, in which case the Commonwealth shall be responsible for any such damage and injury. To avoid the contingency of a verdict in favor of the plaintiff in any action for personal injuries or damages, in the trial of which it may not clearly appear whether the injury resulted from negligence in operation or from defective condition or lack of repair of said line of railway, suitable provision shall be made for the attendance at the trial of some attorney at law selected by the Company and the Commonwealth, to determine in every such case the actual cause of the accident, and to apportion between the Company and the Commonwealth their respective liability for accidents found by such attorney at law to be due partly to negligence in operation and partly to defective condition of said line of railway, and such termination or apportionment shall in all cases be binding upon both parties, and the damages shall be

borne and paid in accordance therewith. If, however, under the proposed contract, the Company is appointed by the Commonwealth its agent to keep said line of railway in repair on account of the Commonwealth, then the Company alone shall be responsible for all accidents of every kind occurring as a result of the existence of said line of railway, or of its operation by said Company, during the life of the contract.

Purchase of the Railway. — The agreement shall provide that at the end of said term of fifteen years the Company will purchase from the Commonwealth and the latter will sell to the Company the said line of railway, including all property of the Commonwealth necessary and convenient in the use thereof, at the value thereof for street railway purposes at the date of such purchase, taking into consideration the past earnings of said line of railway and its prospective earnings thereafter, provided, however, that such price shall not exceed the original cost of the property purchased less a proper allowance for depreciation of the property in its existing condition at the date of purchase, such price to be determined, in case of failure of the Company and the Commonwealth to agree thereon, by three appraisers, one selected by the Company, one by the Public Service Commission, and the third by the two so selected, or, if the two so selected are unable during a period of thirty days after notice of their own appointment to make such selection, then to be selected by the Chief Justice of the Supreme Judicial Court upon application either of the Commonwealth or of the Company; and provided, further, that such price shall not exceed the amount by which the Public Service Commission, or any successor tribunal to said Commission exercising substantially similar powers, shall authorize the Springfield Company to increase its capital stock for the purpose of providing means to make such purchase.

Freight and Express Business. — This second proposition is subject to the condition that the Company shall be authorized to conduct the business of a common carrier of freight and express, as well as of passengers, upon said line of railway and upon any of its own lines of railway between the connection thereof with said line of railway and the Connecticut River, and also, subject to the regulations from time to time established by the Public Service Commission, upon such lines of its railway in the City of Springfield as may be designated by said Commission to enable the Company to deliver its freight at reasonably con-

venient freight stations of its own in said City, or at the freight terminals of steam railroads in said City, together with the right, subject to the assent of any such steam railroad, to make suitable connections between said proposed line of electric railway and any steam railroad.

Freight and Express Rates. — The freight and express charges of the Company shall be subject to the regulation and control of the Public Service Commission as provided by law.

Each alternative of the foregoing proposition is, of course, subject to the necessary condition that suitable legislation shall be enacted permitting the Company to make such a contract as may be necessary to carry out any proposition which may finally be agreed to between the Commonwealth and the Company.

FROM UNITED HILL TOWNS TRANSIT ASSOCIATION.

SPRINGFIELD, MASS., Dec. 10, 1914.

*Western Massachusetts Transportation Commission, Hampden
County Court House, Springfield, Mass.*

GENTLEMEN: — The United Hill Towns Transit Association of Western Massachusetts and the Hampden County Improvement League were requested by your Commission appointed to consider the Improvement of transportation facilities in the five Western Counties, to formulate and submit a plan which, in their opinion, would be feasible and at the same time meet the requirements of the situation. In response to this request, the organizations herewith respectfully submit the following:

1. They believe that nothing short of electric railroads, or street railways, will provide the rural communities of Western Massachusetts the transportation facilities upon which the growth and prosperity of these regions depend.

2. That the acceptance by the New York, New Haven & Hartford Railroad of chapter 765 of the Acts of 1913, and the construction by the Berkshire Street Railway of the extensions required by section 2 of that Act, is desirable and would most effectually meet the needs of the communities to be served by the extensions. We understand, however, that it is the opinion of the Department of Justice at Washington that the acceptance of the Act by the Railroad would be a violation of the Sherman Act, and also that the Berkshire Street Railway System is in no financial condition to assume the obligations of the Act.

3. Assuming, therefore, that the acceptance of the Act of 1913

would be unlawful or impossible, we respectfully recommend, as an alternative, the following: —

(a) That the Commonwealth expend each year for five consecutive years One Million Dollars (\$1,000,000), or a total of Five Million Dollars (\$5,000,000) in the construction, so far as that amount will permit, of the extensions enumerated in section 2 of said chapter 765; the Public Service Commission, after public notice and hearing, to determine the extensions to be built, no extension to be authorized or constructed until and unless the existing Street Railway Co. with whose lines of street railway the proposed extensions will connect, shall have agreed to lease and operate the extension upon terms as may be satisfactory to the Public Service Commission.

(b) The Commonwealth, in order to provide funds for the purpose of constructing the extensions, shall authorize the issue, as the money may be needed, of Five Million Dollars, (\$5,000,000) of Serial Bonds, maturing One Hundred Thousand Dollars (\$100,000) a year after ten (10) years, the last series to mature sixty (60) years after date. We do not undertake to fix the rate of interest which the bonds should yield.

(c) The Act should permit the purchase of any of these extensions by any Street Railway leasing and operating the same upon terms satisfactory to the Public Service Commission.

4. The Act should remove the prohibition contained in the "Berkshire Act" of 1910 so-called, relative to traffic arrangements or consolidations by the Berkshire Street Railway Company.

5. The Berkshire Street Railway should be compelled to operate the line between Lee and Huntington early in 1915.

The suggestion of the construction of street railways or extensions thereof by the Commonwealth involves no startling change of policy. It is not a radical proposition, as the State has for years expended money or loaned its credit for development purposes. Evidence of this is found in the loans made by the Commonwealth to Railroads, namely: —

Loans.

Norwich & Worcester Railroad corporation 1837,	.	.	\$400,000 00
Andover & Haverhill Railroad corporation, 1837,	.	.	100,000 00
Eastern Railroad corporation, 1837,	.	.	500,000 00
Nashua & Lowell Railroad corporation, 1838,	.	.	50,000 00
Boston & Portland Railroad corporation, 1839,	.	.	50,000 00

Western Railroad corporation, Boston & Albany Railroad, 1839-41,	\$4,000,000 00
Southern Vermont Railroad, 1860,	200,000 00
Boston, Hartford & Erie Railroad Company, 1868-69, . .	7,886,077 85
	<hr/>
	\$13,186,077 85
Net cost of Troy & Greenfield Railroad and Hoosac Tunnel,	28,697,925 73
	<hr/>
	\$41,884,003 58

Repayments.

Norwich & Worcester Railroad corporation, 1877-40, .	\$400,000 00
Andover & Haverhill Railroad corporation, 1857 (twenty years),	100,000 00
Eastern Railroad corporation, 1857 (twenty years), . .	500,000 00
Nashua & Lowell Railroad corporation, \$50,000 valuation, availed of only to the extent of \$10,625, remaining in the treasury,	39,375 00
Boston & Portland Railroad corporation, 1858 (nineteen years),	50,000 00
Western Railroad corporation,	4,000,000 00
Southern Vermont Railroad, 1891 (thirty-one years in- terest),	643,000 00
Boston, Hartford & Erie Railroad Company, 1894 (twenty- five years),	1,701,756 25
Troy & Greenfield Railroad and Hoosac Tunnel and Fitchburg Railroad, 1895,	5,000,000 00
	<hr/>
	\$12,434,131 25

Recapitulation.

Loans,	\$41,884,003 58
Repayments,	12,434,131 25
	<hr/>
Total loss,	\$29,449,872 33

Again in the development of the Port of Boston as provided for under the provisions of Chapter 748 of the Acts of 1911 the Legislature provided for the expenditure of nine millions of dollars on the part of the Commonwealth.

For years the State has made liberal appropriations of money for general development and improvement purposes. The Federal Government has recognized not only the necessity but the propriety of expending large sums of money in the development of the great resources, particularly in the West.

Our neighboring State of New York is expending millions of dollars on its canal propositions.

We submit that it is reasonable and proper for the State to provide ways and means for the development of the large agricultural section of Western Massachusetts and its undeveloped water powers and furnishing adequate transportation facilities to its own citizens. The people living in this region need the market and a way to get to it — which trolleys would furnish — and the people of the Commonwealth need the products from these Massachusetts farms.

We further submit that the proposition advanced by us should not be judged entirely by past and present conditions but that due regard should be had for the growth and development of this region which concededly has been too long neglected by the State and where practically every one agrees, from His Excellency, the Governor, down to the plain citizen that some real remedy should be applied which will prove a permanent solution of this issue.

We trust that your Honorable body will see fit to incorporate the suggestions we have made, in the report which you are to make to the General Court, believing that the enactment of legislation along the lines herein indicated will redound to the welfare of the Commonwealth as a whole.

Respectfully submitted,

UNITED HILL TOWNS TRANSIT ASSOCIATION.
HAMPDEN COUNTY IMPROVEMENT LEAGUE.

(Signed) THEODORE W. LEETE,
LEONARD F. HARDY,
ELISHA H. BREWSTER,
H. A. MOSES,

Committee.

FROM DURKEE, WHITE & TOWNE, ENGINEERS.

DURKEE, WHITE & TOWNE, ENGINEERS,
ROOMS 7, 8 AND 9, 17 HAMPDEN STREET,
SPRINGFIELD, MASS., December 8, 1914.

GENTLEMEN: — As per our conversation of recent date, I have made the estimate of constructing an electric railway from Huntington to Cummington, Williamsburg to Cummington and from Cummington to Hinsdale.

No. 1. Huntington to Cummington.

This estimate is based on estimates from survey made by us in 1901 and 1902, and does not include power plant or equipment. The proposed location is partly on private right of way and the balance on public highways. I have used the standard roadbed section (18 ft. wide with 12 inches of gravel under the ties), 80 lb. tee rail, with No. 1 chestnut ties standard bonding and overhead construction.

Distance, 19.047 miles; maximum grade, 5 per cent.

Private right of way, 13.74 miles; cost, \$8,244.

Public right of way, 5.307 miles.

Standard construction per mile, \$38,000; total cost, \$723,786.

Cost of overhead equipment, \$95,235.

No. 2. Cummington to Hinsdale.

This estimate is based partly on actual surveys and the balance on Government Topographical Sheets.

Distance about 16 miles; maximum grade, 7 per cent.

Private right of way, 11.30 miles; cost, \$6,780.

Public right of way, 4.70 miles.

Standard construction per mile, \$36,800; total cost, \$588,800.

Cost of overhead equipment, \$80,000.

No. 3. Williamsburg to Cummington.

Our estimates are based on plans furnished by E. E. Davis, C.E., of Northampton, Mass.

Distance, 12.3 miles; maximum grade, 7 per cent.

Private right of way, 6.70 miles; cost, \$4,020.

Public right of way, 5.60 miles.

Standard construction per mile, \$39,000; total cost, \$479,700.

Cost of overhead equipment, \$61,500.

No. 4. Huntington to Worthington.

Distance, 14.503 miles; maximum grade, 7 per cent.

Private right of way, 12.020 miles.

Public right of way, 2.483 miles.

Standard construction per mile, \$39,365.50; total cost, \$570,917.87.

All above estimates contemplate the crossings of all highways at grade. But if it were desirable to abolish grade crossings, the cost construction will be materially increased.

We hand you herewith Government Typographical Sheets showing both routes, Huntington to Hinsdale, and Williamsburg to Hinsdale.

Yours truly,

(Signed) H. S. DURKEE.

APPENDICES.

APPENDIX A.

HEARINGS AND CONFERENCES. ¹

No.	PLACE AND DATE.	Cities, Towns or Organizations notified or represented, or Persons consulted.
1	Springfield, October 10, . . .	Hearing for Agawam, East Longmeadow, Granville, Hampden, Longmeadow, Monson, Palmer, Southwick, Westfield and Wilbraham. Persons present, 119.
2	Great Barrington, October 19, .	Hearing for Alford, Egremont, Great Barrington, Lee, Monterey, Mount Washington, New Marlborough, Otis, Sandisfield, Sheffield, Stockbridge, Tolland, Tyringham and West Stockbridge. Persons present, 102.
3	Pittsfield, October 20, . . .	Hearing for Becket, Dalton, Hancock, Hinsdale, Lanesborough, Lenox, Pittsfield, Richmond and Washington. Persons present, 30.
4	North Adams, October 21, . . .	Hearing for Adams, Charlemont, Cheshire, Clarksburg, Florida, Monroe, New Ashford, North Adams, Rowe, Savoy and Williamstown. Persons present, 17.
5	Greenfield, October 22, . . .	Hearing for Ashfield, Bernardston, Buckland, Colrain, Conway, Deerfield, Gill, Greenfield, Heath, Leverett, Leyden, Moatague, Northfield, Pelham, Shelburne, Shutesbury, Sunderland and Wendell. Persons present, 85.
6	Northampton, October 23, . . .	Hearing for Amherst, Easthampton, Hatfield, Montgomery, Northampton, Southampton, Westhampton, Whately and Williamsburg. Persons present, 48.
7	Holyoke, October 24, . . .	Hearing for Belchertown, Chicopee, Enfield, Granby, Hadley, Holyoke, Ludlow and South Hadley. Persons present, 55.
8	Worthington, October 26, . . .	Hearing for Chester, Chesterfield, Cummington, Goshen, Hawley, Huntington, Middlefield, Peru, Plainfield, Russell, Windsor and Worthington. Persons present, 235.
9	Athol, October 27, . . .	Hearing for Athol, Barre, Dana, Greenwich, Hardwick, New Salem, Orange, Petersham, Phillipston, Prescott, Royalston, Templeton, Warwick and Winchendon. Persons present, 46.
10	Fitchburg, October 28, . . .	Hearing for Ashburnham, Ashby, Fitchburg, Gardner, Harvard, Hubbardston, Lancaster, Leominster, Lunenburg, Princeton, Sterling and Westminster. Persons present, 28.
11	Worcester, October 29, 30, . . .	Hearing for Auburn, Berlin, Blackstone, Bolton, Boylston, Brookfield, Charlton, Clinton, Douglas, Dudley, Grafton, Holden, Hopedale, Leicester, Mendon, Milford, Millbury, New Braintree, Northborough, Northbridge, North Brookfield, Oakham, Oxford, Paxton, Rutland, Shrewsbury, Southborough, Southbridge, Spencer, Sturbridge, Sutton, Upton, Uxbridge, Warren, Webster, Westborough, West Boylston, West Brookfield and Worcester. Persons present, 52.
12	Boston, November 4, . . .	Conference with Hon. George W. Anderson, United States Attorney, District of Massachusetts.
13	Springfield, November 11, . . .	Hearing for Blandford, Brimfield, Holland, Springfield, Wales, Ware, Westfield (second hearing), West Springfield. Persons present, 16.
14	Springfield, November 16, . . .	Hearing for United Hill Towns Transit Association.

¹ Minutes of all hearings of the commission, together with much other material secured in the investigations conducted and too voluminous to print, have been filed in the State Library at Boston, where they are accessible for examination or reference.

HEARINGS AND CONFERENCES — *Concluded.*

No.	PLACE AND DATE.	Cities, Towns or Organizations notified or represented, or Persons consulted.
15	Springfield, November 16,	Conference with Hon. Calvin Coolidge, President of the Senate.
16	Springfield, November 17,	Hearing for Hampden County Improvement League.
17	Boston, November 19,	Conference with State Highway Commission.
18	Boston, November 20,	Hearing for New England Investment and Security Company, operating the Springfield Street Railway Company, and the Worcester Consolidated Street Railway Company (Bentley W. Warren, Esq., Attorney).
19	Boston, November 23,	Hearing for railroad and street railway companies in general. Berkshire Street Railway Company (represented by Mr. L. S. Storrs, Vice-President, and Mr. C. Q. Richmond, Manager); Fitchburg and Leominster Street Railway Company (represented by Mr. W. W. Sargent, Manager); New England Investment and Security Company (represented by Mr. J. T. Harmer, President, and Bentley W. Warren, Esq., Attorney); New York, New Haven & Hartford Railroad Company (represented by F. A. Farnham, Esq., Attorney).
20	Boston, November 24,	Conference with His Excellency Gov. David I. Walsh.
21	Boston, November 24,	Hearing for counties of Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth and Suffolk. No one appeared.
22	Springfield, November 28,	Conference with Hon. John C. Hammond and Mr. E. E. Davis, C.E., of Northampton.
23	Springfield, December 2,	Hearing for Holyoke Street Railway Company and Northampton Street Railway Company (represented by Mr. L. D. Pellisier, Manager).
24	Springfield, December 19,	Conference with Prof. J. E. Ostrander of Massachusetts Agricultural College.
25	Boston, December 22,	Conference with His Excellency Gov. David I. Walsh.
26	Boston, December 22,	Conference with the Public Service Commission.
27	Boston, December 22,	Conference with the State Highway Commission.
28	Springfield, December 26,	Conference with Prof. A. L. Cance of Massachusetts Agricultural College.

Recapitulation.

Hearings and conferences: number, 28.

Hearings: number, 18; total attendance, 833.

Conferences: number, 10.

APPENDIX B.

TOURS OF INSPECTION BY AUTOMOBILE.

Tour.	DATE.	Route.
1	October 13,	Springfield to Wilbraham, Hampden, East Longmeadow to Connecticut State line, Longmeadow, Agawam, Southwick, Granville, Granville Center to West Granville, returning via Westfield to Springfield.
2	October 15,	Springfield to Chicopee Falls, Willimansett, Holyoke, South Hadley Falls, Granby, Belchertown, Enfield, Ware, Gilbertville, Hardwick, Furnace, Barre, Barre Plains, White Valley, Cold Brook Springs, Wheelwright, North Brookfield, East Brookfield, Brookfield, Warren, West Warren, West Brimfield, Palmer and Wilbraham to Springfield.
3	October 18,	Springfield via Westfield, Russell, Blandford, North Blandford, East Otis, Otis, West Otis, Montville, Sandisfield, West Sandisfield, New Marlborough, Southfield, Hartsville, Monterey, Tyringham, South Lee to Stockbridge.
4	October 19,	Stockbridge via Glendale, West Stockbridge, Alford, North Egremont, Egremont Plains, South Egremont, Mount Washington, Sheffield, and Mill River to Great Barrington.
5	October 20,	Pittsfield via West Pittsfield, through the Lebanon Valley to Hancock and return.
6	October 21,	Pittsfield via Pontoosuc, Lanesborough, Farnham, Cheshire, Cheshire harbor, Maple Grove, Adams, Renfrew, Zylonite and Adams to North Adams.
7	October 22,	North Adams via Clarksburg, Draytonville, Blackinton, Williamstown, South Williamstown to New Ashford and return.
8	October 23,	North Adams via Mohawk Trail, Florida, Charlemont, Buckland, Shelburne Falls and Shelburne to Greenfield.
9	October 26,	Greenfield via Deerfield, North Deerfield, Conway, South Ashfield, Ashfield, Buckland, Charlemont, Shattuckville, Griswoldville, West Leyden to Leyden and return.
10	October 27,	Greenfield via Sunderland, North Amherst, Amherst and Hadley to Northampton.
11	October 28,	Northampton via Florence, Haydenville, Williamsburg, Chesterfield, West Chesterfield, Cummington, Plainfield, Ashfield, Goshen, Leeds and return.
12	October 30,	Pittsfield via Dalton, Hinsdale, Peru, Windsor, Savoy, Plainfield and Cummington to Worthington.
		Athol via Petersham, Templeton, Baldwinsville, Royals-ton, Tully to Orange and return.
		Fitchburg via Ashby, Ashburnham, Gardner, South Gardner, Westminster to South Fitchburg and return.
		Fitchburg via Leominster, Sterling, West Boylston, Oakdale and Glendale to Worcester.
		Worcester via Millbury, Saundersville, Sutton, West Sutton, Manchaug, Webster, Dudley, Quinebaug, West Dudley, Southbridge, Saundersdale, Globe Village, Sturbridge, Fiskdale, Brimfield and Palmer to Springfield.

APPENDIX C.

NEW TROLLEY LINES OR EXTENSIONS OF EXISTING LINES REQUESTED
FROM ALL SOURCES.

[NOTE. — Except for Nos. 1, 2 and 3, which have been figured by engineers, the number of miles stated in each case is merely a conservative rough approximation of the length of each line.]

No.	NEW LINE OR EXTENSION REQUESTED.	Approximate Length.
1	Huntington to Cummington,	19.0
2	Williamsburg to Cummington,	12.3
3	Cummington to Hinsdale,	16.0
4	West Becket through Otis and Sandisfield to State line, thence to Winsted, Conn.	17.5 ¹
5	Blandford via Russell Mountain to Westfield,	13.0
6	Southwick to Westfield,	10.0
7	Agawam to Granville,	12.0
8	East Longmeadow to Hampden,	5.5
9	Longmeadow to East Longmeadow,	4.0
10	Monson to State line, thence to Stafford Springs, Conn.,	4.5 ¹
11	East Brimfield through Wales to State line, thence to Stafford Springs, Conn.,	6.5 ¹
12	Fiskdale via Holland village to State line, thence to Stafford Springs, Conn.,	7.0 ¹
13	Palmer via West Brimfield to West Warren,	8.0
14	Springfield via Wilbraham to North Wilbraham,	8.0
15	Springfield: from Chestnut Street easterly on Carew Street to East Springfield.	3.0
16	Springfield: from trolley terminus on Page Boulevard out toward Berkshire Street.	2.0
17	Chicopee to West Springfield (Riverdale), . . . . .	.5
18	Chicopee Falls to Springfield (Page Boulevard trolley terminus),	1.0
19	Chicopee: Britton Street to Willimansett,	2.0
20	Great Barrington via Alford village to State Line village,	8.0
21	Great Barrington via Green River Valley to State line, thence to Chatham, N. Y.	8.0 ¹
22	Great Barrington via Monterey to Otis Center (to connect with No. 4), . .	16.0
23	Great Barrington via Hartsville, Mill River and Clayton to State line, thence to Canaan, Conn.	12.0 ¹
24	Stockbridge to West Stockbridge,	5.0
25	West Stockbridge to West Pittsfield,	7.0
26	West Pittsfield to State line, thence to Nassau, N. Y.,	4.0 ¹
27	Hinsdale: extension on Maple Street, . . . . .	.7
28	Briggsville to State line, thence to Stamford, Vt.,	2.0 ¹
29	Williamstown to South Williamstown,	4.5
30	South Williamstown to Hancock and State line, thence to New York trolley line connections.	11.0 ¹

¹ Length of section in Massachusetts.

NEW TROLLEY LINES OR EXTENSIONS OF EXISTING LINES REQUESTED
FROM ALL SOURCES — *Concluded.*

No.	NEW LINE OR EXTENSION REQUESTED.	Approximate Length.
31	South Williamstown via New Ashford and Lanesborough to Pittsfield, .	19.0
32	West Pelham to Pelham,	2.0
33	Adams via Savoy Hollow to Cummington,	19.0
34	Conway via Ashfield and Plainfield into Windsor township (to connect with No. 33).	21.0
35	North Amherst via East Leverett, Shutesbury Center and Wendell Hill to Orange.	16.0
36	Pelham Hill to Shutesbury Center (to connect with No. 35), . . .	6.0
37	Orange via Wendell Depot and Erving to Millers Falls,	11.0
38	Orange via Warwick village to State line, thence to Winchester, N. H., .	9.0 ¹
39	Sunderland to South Deerfield,	2.0
40	Southampton to Hampton Ponds,	3.5
41	Southampton to Easthampton,	3.0
42	Westfield via Wyben to Southampton,	9.0
43	South Hadley via Granby, Belchertown and Enfield to Ware, . . .	22.5
44	Athol via Petersham to Barre,	15.0
45	Barre via Oakham and Paxton to Worcester,	19.0
46	Barre via Coldbrook and Rutland to Jefferson,	12.0
47	South Gardner via Hubbardston and North Rutland to Rutland (to connect with No. 46).	14.0
48	Gilbertville to Barre,	10.5
49	Athol across Royalston township to Winchendon,	13.0
50	Winchendon to Winchendon Springs,	2.5
51	Fitchburg to Ashburnham,	8.0
52	Fitchburg to Townsend,	7.0
53	Clinton to Sterling,	5.0
54	Clinton via Lancaster and Harvard to Ayer,	14.0
55	West Boylston via Oakdale, West Sterling, East Princeton, and Mount Wachusett to South Westminister.	13.5
56	Sterling to West Sterling (to connect with No. 55),	3.0
57	Auburn: Trowbridgeville line extension through Boyce Street, . . .	.5
58	State line northerly through Blackstone and Mendon to Hopedale, . .	8.0
59	Charlton City via Charlton Depot to Spencer,	9.5
60	Leicester to Rochdale,	4.5
61	Milford (Memorial Square) to Hopkinton,	3.5
62	Webster via Thompson Road to State line,	2.0
63	Southbridge to State line, thence to Putnam, Conn.,	4.0 ¹
64	Grafton to Farnumsville,	2.0
65	Millbury to West Millbury,	2.0
	Total approximate mileage,	545.5

¹ Length of section in Massachusetts.

APPENDIX D.

TABLE 1. — CITIES AND TOWNSHIPS OF THE FIVE WESTERN COUNTIES, ALPHABETICALLY ARRANGED, SHOWING THE STATE HIGHWAY AND STEAM OR TROLLEY TRANSPORTATION FACILITIES IN EACH.

[Key: S=steam railroad; T=trolley line; SH=State highway. Abbreviations for counties: B=Berkshire; F=Franklin; Hd=Hampden; Hs=Hampshire; W=Worcester.]

Adams (B), S	T	SH	Conway (F), S	T	-
Agawam (Hd), . . . S	T	SH	Cummington (Hs), . . -	-	-
Alford (B), -	-	-	Dalton (B), S	T	SH
Amherst (Hd), . . . S	T	SH	Dana (W), S	-	-
Ashburnham (W), . . S	-	SH	Deerfield (F), . . . S	T	SH
Ashfield (F), -	-	SH	Dudley (W), S	-	SH
Athol (W), S	T	SH	Douglas (W), S	-	SH
Auburn (W), S	T	SH	Easthampton (Hs), . . S	T	SH
Barre (W), S	-	SH	East Longmeadow (Hd), . S	T	SH
Becket (B), S	T ¹	SH	Egremont (B), -	T	-
Belchertown (Hs), . . S	-	SH	Enfield (Hs), S	-	-
Berlin (W), S	T	-	Erving (F), S	-	SH
Bernardston (F), . . . S	-	SH	Fitchburg (W), S	T	-
Blackstone (W), . . . S	T	SH	Florida (B), S	-	SH
Blandford (Hd), . . . -	T ¹	-	Gardner (W), S	T	SH
Bolton (W), S	-	-	Gill (F), -	-	SH
Boylston (W), -	T	-	Goshen (Hs), -	-	SH
Brimfield (Hd), . . . S	T	SH	Grafton (W), S	T	SH
Brookfield (W), . . . S	T	SH	Granby (Hs), -	T	SH
Buckland (F), S	T	SH	Granville (Hd), -	-	-
Charlemont (F), . . . S	-	SH	Great Barrington (B), . . S	T	SH
Charlton (W), S	T	SH	Greenfield (F), S	T	SH
Cheshire (B), S	T	SH	Greenwich (Hs), S	-	-
Chester (Hd), S	-	SH	Hadley (Hs), S	T	SH
Chesterfield (Hs), . . -	-	-	Hampden (Hd), -	-	-
Chicopee (Hd), S	T	-	Hancock (B), -	-	SH
Clarksburg (B), . . . -	T	SH	Harvard (W), S	-	SH
Clinton (W), S	T	-	Hardwick (W), S	-	SH
Colrain (F), -	T	SH	Hatfield (Hs), S	T	SH

¹ Indicates Lee and Huntington line, not yet in operation.

TABLE 1. — CITIES AND TOWNSHIPS OF THE FIVE WESTERN COUNTIES
ALPHABETICALLY ARRANGED, SHOWING THE STATE HIGHWAY AND
STEAM OR TROLLEY TRANSPORTATION FACILITIES IN EACH — *Con-
tinued.*

Hawley (F), - - -	Northborough (W), . . . S T SH
Heath (F), - - -	Northbridge (W), . . . S T SH
Hinsdale (B), S T SH	North Brookfield (W), . . - T SH
Holden (W), S T SH	Northfield (F), . . . S - SH
Holland (Hd), - - -	Oakham (W), . . . S - -
Holyoke (Hd), S T -	Orange (F), . . . S T SH
Hopedale (W), S T -	Otis (B), - T ¹ -
Hubbardston (W), . . . S - -	Oxford (W), . . . S T SH
Huntington (Hs), . . . S T SH	Palmer (Hd), . . . S T SH
Lancaster (W), S T SH	Paxton (W), - - SH
Lanesborough (B), . . . S T SH	Pelham (Hs), . . . - T -
Lee (B), S T SH	Peru (B), - - -
Leicester (W), - T SH	Petersham (W), . . . - - -
Lenox (B), S T SH	Phillipston (W), . . . S T SH
Leominster (W), S T SH	Pittsfield (B), . . . S T -
Leverett (F), S - -	Plainfield (Hs), . . . - - -
Leyden (F), - - -	Prescott (Hs), . . . S - -
Longmeadow (Hd), . . . S T -	Princeton (W), . . . S - SH
Ludlow (Hd), S T -	Richmond (B), . . . S - SH
Lunenburg (W), S T SH	Rowe (F), S - -
Mendon (W), - T -	Royalston (W), . . . S - -
Middlefield (Hs), . . . S - -	Russell (Hd), . . . S T SH
Milford (W), S T SH	Rutland (W), . . . S - SH
Millbury (W), S T SH	Sandisfield (B), . . . - - -
Monroe (F), - - -	Savoy (B), - - -
Monson (Hd), S T SH	Sheffield (B), . . . S T SH
Montague (F), S T SH	Shelburne (F), . . . S T SH
Monterey (B), - - -	Shrewsbury (W), . . . - T SH
Montgomery (Hd), . . . S - -	Shutesbury (F), . . . - - -
Mount Washington (B), . - - -	Southampton (Hs), . . . S - SH
New Ashford (B), . . . - - -	Southborough (W), . . . S T SH
New Braintree (W), . . . S - SH	Southbridge (W), . . . S T SH
New Marlborough (B), . - - -	South Hadley (Hs), . . - T SH
New Salem (F), S - -	Southwick (Hd), . . . S - -
North Adams (B), . . . S T SH	Spencer (W), . . . S T SH
Northampton (Hs), . . . S T -	Springfield (Hd), . . . S T -

¹ Indicates Lee-Huntington line, not yet in operation.

TABLE 1. — CITIES AND TOWNSHIPS OF THE FIVE WESTERN COUNTIES, ALPHABETICALLY ARRANGED, SHOWING THE STATE HIGHWAY AND STEAM OR TROLLEY TRANSPORTATION FACILITIES IN EACH — *Concluded.*

Sterling (W), . . . S T SH	Westborough (W), . . . S T SH
Stockbridge (W), . . . S T SH	West Boylston (W), . . . S T SH
Sturbridge (W), . . . - T SH	West Brookfield (W), . . . S T SH
Sunderland (F), . . . - T SH	Westfield (Hd), . . . S T SH
Sutton (W), S - SH	Westhampton (Hs), . . . - - -
Templeton (W), S T SH	Westminster (W), S T SH
Tolland (Hd), - - -	West Springfield (Hd), . . S T SH
Tyringham (B), - - -	West Stockbridge (B), . . S - -
Upton (W), - T -	Whately (F), S T SH
Uxbridge (W), S T SH	Wilbraham (Hd), S T SH
Wales (Hd), - - SH	Williamsburg (Hs), S T SH
Ware (Hs), S T SH	Williamstown (B), S T SH
Warren (W), S T SH	Winchendon (W), S T SH
Warwick (F), - - -	Windsor (B), - - SH
Washington (B), S - -	Worcester (W), S T -
Webster (W), S T SH	Worthington (Hs), . . . - - -
Wendell (F), S - -	

TABLE 2. — TOWNSHIPS OF THE FIVE WESTERN COUNTIES WHICH HAVE NO RAIL TRANSPORTATION FACILITIES NOR STATE HIGHWAYS.

Alford (B).	Heath (F).	New Ashford (B).	Shutesbury (F).
Chesterfield (Hs).	Holland (Hd).	New Marlborough (B).	Tolland (Hd).
Cummington (Hs).	Leyden (F).	Peru (B).	Tyringham (B).
Granville (Hd).	Monroe (F).	Plainfield (Hs).	Warwick (F).
Hampden (Hd).	Monterey (B).	Sandisfield (B).	Westhampton (Hs).
Hawley (F).	Mount Washington (B).	Savoy (B).	Worthington (Hs).

TABLE 3. — TOWNSHIPS OF THE FIVE WESTERN COUNTIES WITH NO RAIL TRANSPORTATION FACILITIES WHICH HAVE STATE HIGHWAYS.

Ashfield (F).	Goshen (Hs).	Paxton (W).	Windsor (B).
Gill (F).	Hancock (B).	Wales (Hd).	

TABLE 4. — RECAPITULATION.

Total number of cities and townships,	163
Number with steam railroads, trolley lines and State highways,	66
Number with steam railroads and trolley lines only,	13
Number with steam railroads and State highways only,	19
Number with trolley lines and State highways only,	9
Number with steam railroads only,	17
Number with trolley lines only,	7
Number with State highways only,	7
Number with no steam railroads, trolley lines or State highways,	25

APPENDIX E.

TABLE 1. — AREA AND POPULATION IN THE THIRTY-THREE TOWNS IN THE FIVE WESTERN COUNTIES WITHOUT STEAM OR ELECTRIC TRANSPORTATION FACILITIES, WITH LOSS OR GAIN THEREIN FROM 1820 TO 1910.

West of Berkshire Trolley System.

SPECIFIED TOWNS.	Area in Square Miles.	1820.	1860.	1880.	1910.	Maximum Population in Any Census Year.	Loss 1820 to 1910.	Per Cent. of Loss, 1820 to 1910.
BERKSHIRE COUNTY.								
Alford,	11.1	570	542	348	275	577 (1790)	295	51.7
Hancock,	37.7	1,165	816	642	465	1,211 (1790)	700	60.0
Mount Washington, . .	22.5	467	321	205	110	474 (1810)	357	76.4
New Ashford,	13.0	358	239	203	92	460 (1790)	266	74.3
	84.3							

Between Fitchburg and Boston & Albany Railroads and Berkshire and Connecticut Valley Street Railways.

BERKSHIRE COUNTY.								
Peru,	27.1	748	499	403	237	1,361 (1800)	511	68.3
Savoy,	39.3	852	904	715	503	955 (1850)	349	40.9
Windsor,	33.5	1,085	839	644	404	1,108 (1810)	681	62.7
FRANKLIN COUNTY.								
Ashfield,	39.7	1,748	1,302	1,066	959	1,809 (1810)	789	45.1
Hawley,	38.0	1,089	671	592	424	1,089 (1820)	665	61.0
HAMPSHIRE COUNTY.								
Chesterfield,	32.4	1,447	897	769	536	1,447 (1820)	911	62.9
Cummington,	22.8	1,060	1,085	881	637	1,261 (1830)	423	39.9
Goshen,	17.1	632	439	327	279	724 (1800)	353	55.8
Plainfield,	21.8	936	639	457	406	984 (1830)	530	56.6
Westhampton,	27.8	896	608	563	423	918 (1830)	473	52.7
Worthington,	32.5	1,276	1,041	758	569	1,391 (1810)	707	55.4
	324.8							

TABLE 1. — AREA AND POPULATION IN THE THIRTY-THREE TOWNS IN THE FIVE WESTERN COUNTIES WITHOUT STEAM OR ELECTRIC TRANSPORTATION FACILITIES, WITH LOSS OR GAIN THEREIN FROM 1820 TO 1910 —
Concluded.

South of Boston & Albany Railroad and Western Berkshire and Connecticut Valley Street Railways.

SPECIFIED TOWNS.	Area in Square Miles.	1820.	1860.	1880.	1910.	Maximum Population in Any Census Year.	Loss, 1820 to 1910.	Per Cent. of Loss, 1820 to 1910.
BERKSHIRE COUNTY.								
Monterey,	28.2	- ¹	758	635	388	823 (1855)	- ¹	- ¹
New Marlborough,	48.4	1,668	1,782	1,876	1,124	2,037 (1875)	544	32.6
Otis,	37.8	981	998	785	494	1,224 (1850)	487	49.6
Sandisfield,	53.1	1,646	1,585	1,107	566	1,857 (1800)	1,080	65.6
Tyringham,	18.9	1,443	730	542	382	1,712 (1800)	1,061	73.5
HAMPDEN COUNTY.								
Blandford,	52.9	1,515	1,256	979	717	1,778 (1800)	798	52.6
Granville,	45.3	1,643	1,385	1,205	781	2,309 (1800)	862	52.4
Tolland,	31.3	692	596	452	180	798 (1810)	512	73.9
	315.9							

North of Fitchburg Railroad.

FRANKLIN COUNTY.								
Gill,	14.6	800	683	733	942	1,082 (1895)	142 ²	17.7 ²
Heath,	25.0	1,122	661	560	346	1,199 (1830)	776	69.1
Leyden,	28.5	974	606	507	363	1,095 (1800)	611	62.7
Monroe,	11.1	- ³	236	166	246	305 (1900)	- ³	- ³
Warwick,	37.4	1,256	932	713	477	1,256 (1820)	779	62.0
	116.6							

South of Fitchburg, East of Connecticut Valley and West of Worcester Street Railways.

FRANKLIN COUNTY.								
Shutesbury,	26.6	1,029	798	529	267	1,029 (1820)	762	74.0
WORCESTER COUNTY.								
Paxton,	15.8	613	725	592	416	820 (1850)	197	32.1
	42.4							

South and East of Springfield Street Railway System.

HAMPDEN COUNTY.								
Hampden,	18.9	- ⁴	- ⁴	958	645	958 (1880)	-	-
Holland,	13.5	453	419	302	145	453, (1820)	308	67.9
Wales,	16.6	683	677	1,030	345	1,030 (1880)	338	49.4
	49.0							

¹ Established April 12, 1847.

² Gain.

³ Established February 21, 1822.

⁴ Established March 28, 1878, from part of Wilbraham.

TABLE 2. — POPULATION OF THE CITIES AND TOWNS OF BERKSHIRE, FRANKLIN, HAMPDEN AND HAMPSHIRE COUNTIES, CLASSIFIED ACCORDING TO ACTUAL TRANSPORTATION SERVICE.

Section A. — Cities and Towns actually served by Transportation Lines.

1. WITH POPULATION OF 2,000 AND OVER IN 1860.

CITIES AND TOWNS.	1860.	1890.	1900.	1910.
BERKSHIRE COUNTY.				
Adams,	6,924	9,213	11,134	13,026
Great Barrington,	3,871	4,612	5,854	5,926
Lee,	4,420	3,785	3,596	4,106
Pittsfield,	8,045	17,281	21,766	32,121
Stockbridge,	2,136	2,132	2,081	1,933
Williamstown,	2,611	4,221	5,013	3,708
FRANKLIN COUNTY.				
Deerfield,	3,073	2,910	1,969	2,209
Greenfield,	3,198	5,252	7,927	10,427
HAMPDEN COUNTY.				
Chicopee,	7,261	14,050	19,167	25,401
Holyoke,	4,997	35,637	45,712	57,730
Monson,	3,164	3,650	3,402	4,758
Palmer,	4,082	6,520	7,801	8,610
Springfield,	15,199	44,179	62,059	88,926
Westfield,	5,055	9,805	12,310	16,044
West Springfield,	2,105	5,077	7,105	9,224
Wilbraham,	2,081	1,814	1,595	2,332
Hampden (adjacent),	- ¹	831	782	645
HAMPSHIRE COUNTY.				
Amherst,	3,206	4,512	5,028	5,112
Belchertown,	2,709	2,120	2,292	2,054
Hadley,	2,105	1,669	1,789	1,999
Northampton,	6,788	14,990	18,643	19,431
South Hadley,	2,277	4,261	4,526	4,894
Williamsburg,	2,095	2,057	1,926	2,132
Ware,	3,597	7,329	8,263	8,774
Total,	100,999	207,907	261,740	331,522

Gain, 1860-1910=230,523 (228 per cent.).

Gain per decade, 1860-1910=44,104 (43 per cent.).

Gain per decade, 1890-1900=53,833 (25 per cent.).

Gain per decade, 1900-10=69,782 (26 per cent.).

¹ Hampden was part of Wilbraham until 1878.

TABLE 2. — POPULATION OF THE CITIES AND TOWNS OF BERKSHIRE, FRANKLIN, HAMPDEN AND HAMPSHIRE COUNTIES, CLASSIFIED ACCORDING TO ACTUAL TRANSPORTATION SERVICE — *Continued.*

Section A. — Cities and Towns actually served by Transportation Lines
— Continued.

2. WITH POPULATION UNDER 2,000* IN 1860.

TOWNS.	1860.	1890.	1900.	1910.
BERKSHIRE COUNTY.				
Becket,	1,578	946	994	959
Dalton,	1,243	2,885	3,014	3,568
Florida,	645	436	390	395
Hinsdale,	1,511	1,739	1,485	1,116
Lenox,	1,711	2,889	2,942	3,060
North Adams,	- ¹	16,074	24,200	22,019
Sheffield,	2,621	1,954	1,804	1,817
West Stockbridge,	1,589	1,492	1,158	1,271
Washington,	948	434	377	277
Richmond,	914	796	679	650
FRANKLIN COUNTY.				
Buckland,	1,702	1,570	1,446	1,573
Bernardston,	968	770	792	741
Charlemont,	1,075	972	1,094	1,001
Gill,	683	960	1,015	942
Montague,	1,593	6,296	6,150	6,866
Northfield,	1,712	1,869	1,966	1,642
Orange,	1,622	4,568	5,520	5,282
Sunderland,	830	663	771	1,047
Wendell,	704	505	492	502
Shelburne,	1,448	1,553	1,508	1,498
Whately,	1,057	779	769	846
HAMPDEN COUNTY.				
Chester,	1,314	1,295	1,450	1,377
Longmeadow,	1,376	2,183	811	1,084
East Longmeadow,	- ²	- ²	1,187	1,553
Ludlow,	1,174	1,939	3,536	4,948
Russell,	605	879	793	965
Agawam,	1,698	2,352	2,536	3,501
Southwick,	1,188	914	1,040	1,020

¹ North Adams was part of Adams until 1878.

² East Longmeadow was part of Longmeadow until 1894.

TABLE 2. — POPULATION OF THE CITIES AND TOWNS OF BERKSHIRE, FRANKLIN, HAMPDEN AND HAMPSHIRE COUNTIES, CLASSIFIED ACCORDING TO ACTUAL TRANSPORTATION SERVICE — *Continued*.

Section A. — Cities and Towns actually served by Transportation Lines
— Concluded.

2. WITH POPULATION UNDER 2,000 IN 1860.

TOWNS.	1860.	1890.	1900.	1910.
HAMPSHIRE COUNTY.				
Enfield,	1,025	952	1,036	874
Greenwick,	699	526	491	452
Hatfield,	1,337	1,246	1,500	1,986
Huntington,	1,216	1,385	1,475	1,473
Easthampton,	1,916	4,395	5,603	8,524
Southampton,	1,130	1,017	1,012	870
Total,	40,841	69,233	81,036	85,699

Gain, 1860-1910=44,858 (109 per cent.).

Gain per decade, 1860-1910=8,971 (22 per cent.).

Gain per decade, 1890-1900=11,803 (17 per cent.).

Gain per decade, 1900-10=4,663 (5.7 per cent.).

Section B. — Cities and Towns with no Transportation Service, but adjacent to Towns actually served by Transportation Lines.

TOWNS. .	1860.	1890.	1900.	1910.
BERKSHIRE COUNTY.				
Alford,	542	297	272	275
Egremont,	1,079	845	758	605
Hancock,	816	506	451	465
Monterey,	758	495	455	388
New Marlborough,	1,782	1,305	1,282	1,124
Peru,	499	305	253	237
Savoy,	904	569	506	503
Tyringham,	730	412	386	382
New Ashford,	239	125	107	92
Mount Washington,	321	148	122	110
FRANKLIN COUNTY.				
Heath,	661	503	441	346
Leyden,	606	407	379	363
Leverett,	964	702	744	728
New Salem,	957	856	807	639

TABLE 2. — POPULATION OF THE CITIES AND TOWNS OF BERKSHIRE, FRANKLIN, HAMPDEN AND HAMPSHIRE COUNTIES, CLASSIFIED ACCORDING TO ACTUAL TRANSPORTATION SERVICE — *Continued.*

Section B. — Cities and Towns with no Transportation Service, but adjacent to Towns actually served by Transportation Lines — Concluded.

TOWNS.	1860.	1890.	1900.	1910.
HAMPDEN COUNTY.				
Blandford,	1,256	871	836	717
Granville,	1,385	1,061	1,050	781
Holland,	419	201	169	145
Montgomery,	371	266	273	217
HAMPSHIRE COUNTY.				
Granby,	907	765	761	761
Prescott,	611	376	380	320
Westhampton,	608	477	469	423
Total,	16,415	11,492	10,901	9,621

Loss, 1860-1910=6,794 (41 per cent.).

Loss per decade, 1860-1910=1,358 (8.2 per cent.).

Loss per decade, 1890-1900=591 (5.1 per cent.).

Loss per decade, 1900-10=1,280 (11.7 per cent.).

Section C. — Cities and Towns with no Transportation Lines and remote from any Transportation Service.

TOWNS.	1860.	1890.	1900.	1910.
BERKSHIRE COUNTY.				
Otis,	998	583	476	494
Sandisfield,	1,585	807	661	566
Windsor,	839	612	507	404
FRANKLIN COUNTY.				
Ashfield,	1,302	1,025	955	959
Hawley,	671	515	429	424
Monroe,	236	282	305	246
Shutesbury,	798	453	382	267
Warwick,	932	565	619	477
HAMPDEN COUNTY.				
Tolland,	596	393	275	180
Wales,	677	700	773	345

TABLE 2. — POPULATION OF THE CITIES AND TOWNS OF BERKSHIRE, FRANKLIN, HAMPDEN AND HAMPSHIRE COUNTIES, CLASSIFIED ACCORDING TO ACTUAL TRANSPORTATION SERVICE — *Concluded.*

Section C. — Cities and Towns with no Transportation Lines and remote from any Transportation Service — Concluded.

TOWNS.	1860.	1890.	1900.	1910.
HAMPSHIRE COUNTY.				
Chesterfield,	897	608	611	536
Cummington,	1,085	787	748	637
Goshen,	439	297	316	279
Plainfield,	639	435	404	406
Worthington,	1,041	714	675	569
Total,	12,735	8,776	8,136	6,789

Loss, 1860-1910=5,946 (46 per cent.).

Loss per decade, 1860-1910=1,189 (9 per cent.).

Loss per decade, 1890-1900=640 (7.2 per cent.).

Loss per decade, 1900-10=1,347 (12 per cent.).

Section D. — Certain Towns having Trolley Service.

TOWNS.	1860.	1890.	1900.	1910.
BERKSHIRE COUNTY.				
Cheshire,	1,533	1,308	1,221	1,508
Lanesborough,	1,308	1,018	780	947
Clarksburg,	420	884	943	1,207
FRANKLIN COUNTY.				
Conway,	1,689	1,451	1,458	1,230
Colrain,	1,798	1,671	1,749	1,741
HAMPDEN COUNTY.				
Brimfield,	1,363	1,096	941	866
HAMPSHIRE COUNTY.				
Pelham,	748	486	462	467
Total,	8,859	7,914	7,554	7,966

Loss, 1860-1910=893 (11 per cent.).

Loss per decade, 1860-1910=178 (2 per cent.).

Loss per decade, 1890-1900=360 (4 per cent.).

Gain per decade, 1900-10=412 (5 per cent.).

TABLE 3. — COMPARATIVE DATA OF AREA AND POPULATION FOR THE PRECEDING THIRTY-THREE TOWNS, THE FIVE WESTERN COUNTIES, AND THE STATE.

	Per Cent.	Square Miles.	1820.	1860.	1880.	1910.	Loss or Gain 1820-1910.
Thirty-three specified towns: —							
Area (total),	—	933	—	—	—	—	—
1. Per cent. of area of the five western counties,	20.9	—	—	—	—	—	—
2. Per cent. of area of the State,	11.4	—	—	—	—	—	—
Population (total),	—	—	30,847	25,642	22,244	15,143	15,143 ¹
1. Per cent. of population of five western counties,	—	—	15.9	7.5	4.1	1.7	50.9
2. Per cent. of population of the State,	—	—	5.8	2.0	1.2	.4	—
Five western counties: —							
Area (total),	—	4,450	—	—	—	—	—
1. Per cent. of area of the State,	54.4	—	—	—	—	—	—
Population (total),	—	—	193,121	341,402	537,193	843,212	650,091 ²
1. Per cent. of population of the State,	—	—	36.9	27.7	36.9	25.0	341.2
The State: —							
Area,	—	8,177	—	—	—	—	—
Population,	—	—	523,287	1,231,066	1,783,085	3,366,416	2,843,129 ³

¹ Loss.

² Gain.

³ Gain (543.3 per cent.).

APPENDIX F.

TABLE 1. — ASSESSED VALUATION OF ALL PROPERTY IN THE THIRTY-THREE TOWNS IN THE FIVE WESTERN COUNTIES WITHOUT STEAM OR ELECTRIC TRANSPORTATION.

West of Berkshire Trolley System.

SPECIFIED TOWNS.	1875, May 1.	1880, May 1.	1910, April 1.	1912, April 1.	1913, April 1.
BERKSHIRE COUNTY.					
Alford,	273,969	259,687	188,110	184,863	189,638
Hancock,	446,930	384,077	305,224	388,534	390,935
Mount Washington,	88,934	67,159	98,150	111,810	133,688
New Ashford,	103,255	88,804	52,575	56,480	65,600

Between Fitchburg and Boston & Albany Railroads and Berkshire and Connecticut Valley Street Railways.

BERKSHIRE COUNTY.					
Peru,	165,798	119,598	145,081	145,435	165,240
Savoy,	232,932	214,262	185,515	183,890	190,860
Windsor,	236,180	219,866	288,853	304,430	301,060
FRANKLIN COUNTY.					
Ashfield,	529,917	436,016	652,944	724,342	802,757
Hawley,	157,220	148,335	188,419	197,968	202,657
HAMPSHIRE COUNTY.					
Chesterfield,	307,623	295,107	319,969	337,763	346,831
Cummington,	440,842	366,821	325,057	336,399	340,275
Goshen,	137,822	140,530	183,530	208,529	218,157
Plainfield,	180,810	146,675	183,073	194,164	199,147
Westhampton,	303,169	245,913	241,838	264,546	278,215
Worthington,	356,290	320,042	356,765	367,129	390,123

TABLE 1. — ASSESSED VALUATION OF ALL PROPERTY, ETC. — *Concluded.**South of Boston & Albany Railroad and between Berkshire and Connecticut Valley Street Railways.*

SPECIFIED TOWNS.	1875, May 1.	1880, May 1.	1910, April 1.	1912, April 1.	1913, April 1.
BERKSHIRE COUNTY.					
Monterey,	245,070	234,009	320,803	344,103	356,540
New Marlborough,	741,464	634,339	765,010	800,860	855,180
Otis,	302,507	226,949	262,216	259,383	294,045
Sandisfield,	476,421	385,597	362,397	381,515	430,183
Tyringham,	272,865	235,350	356,217	364,441	367,454
HAMPDEN COUNTY.					
Blandford,	407,315	338,745	550,579	624,456	758,194
Granville,	405,172	346,735	483,412	590,621	525,005
Tolland,	267,330	180,716	204,658	251,902	266,697

North of Fitchburg Railroad.

FRANKLIN COUNTY.					
Gill,	470,506	422,820	475,357	494,961	495,638
Heath,	191,322	177,224	179,792	203,477	228,995
Leyden,	207,131	195,015	171,802	197,074	205,980
Monroe,	47,777	39,617	167,683	173,269	176,934
Warwick,	266,036	253,493	442,450	414,728	456,282

South of Fitchburg Railroad, East of Connecticut Valley and West of Worcester Street Railway.

FRANKLIN COUNTY.					
Shutesbury,	18,550	165,615	290,525	270,480	321,611
WORCESTER COUNTY.					
Paxton,	323,483	278,238	339,490	383,388	397,180

South and East of Springfield Street Railway System.

HAMPDEN COUNTY.					
Hampden,	— ¹	365,284	391,220	424,575	447,535
Holland,	137,147	119,320	107,725	110,659	112,132
Wales,	447,950	390,636	285,355	291,371	271,902

¹ Established March 28, 1878, from part of Wilbraham.

TABLE 2. — COMPARATIVE DATA OF VALUATIONS FOR THE PRECEDING THIRTY-THREE TOWNS, THE FIVE WESTERN COUNTIES AND THE STATE.

YEAR.	THIRTY-THREE SPECIFIED TOWNS.			FIVE WESTERN COUNTIES.		The State.
	Total Valuation.	PER CENT. OF —		Total Valuation.	Per Cent. of the State.	
		The Five Western Counties.	The State.			
1875, . . .	\$9,356,757	3.1	.5	\$298,354,651	16.2	\$1,840,732,706
1880, . . .	8,442,594	3.1	.5	266,871,751	16.8	1,584,756,802
1910, . . .	9,871,794	1.4	.2	687,428,483	17.5	3,907,892,398
1912, . . .	10,587,445	1.3	.2	781,847,843	18.3	4,249,699,855
1913, . . .	11,182,670	1.3	.2	838,160,235	18.8	4,438,458,656
Increase, . . .	\$1,805,933, or 19.3 per cent.			\$539,795,584, or 180.9 per cent.		\$2,597,725,950, or 141.1 per cent.

APPENDIX G.

TABLE 1. — FARMS AND FARM PROPERTY IN THE FIVE WESTERN COUNTIES
IN 1910, WITH COMPARATIVE DATA FOR 1900.

	Berkshire.	Franklin.	Hampden. ¹	Hamp- shire. ¹	Worcester.
Population, 1910,	105,259	43,600	231,369	63,327	399,657
Population, 1900,	95,667	41,209	175,603	58,820	346,958
Number of all farms, 1910, . .	2,947	3,113	2,779	2,917	7,464
Number of all farms, 1900, . .	3,436	3,280	2,589	3,517	7,550
Land and farm area: —					
Approximate land area (acres),	618,240	446,080	407,040	374,400	995,840
Land in farms 1910 (acres), . .	388,353	314,700	253,398	276,054	615,116
Land in farms, 1900 (acres), . .	472,288	350,032	292,153	321,924	669,388
Improved land in farms, 1910 (acres),	159,703	92,591	100,431	103,271	244,330
Improved land in farms, 1900 (acres),	200,034	127,786	121,854	134,180	257,733
Woodland in farms (acres), . .	146,610	125,824	90,093	99,496	220,356
Other unimproved land in farms (acres),	82,040	96,285	62,874	73,287	150,430
Per cent. of land area in farms,	62.8	70.5	62.3	73.7	61.8
Per cent. of farm land im- proved,	41.1	29.4	39.6	37.4	39.7
Average acres per farm, . . .	131.8	101.1	91.2	94.6	82.4
Average improved acres per farm,	54.2	29.7	36.1	35.4	32.7
Value of farm property: —					
All farm property, 1910, . . .	\$19,314,342	\$12,170,694	\$14,515,476	\$13,654,146	\$37,946,139
All farm property, 1900, . . .	\$16,625,757	\$10,235,497	\$11,051,368	\$12,097,482	\$33,515,017
Per cent. of increase, 1900-10,	16.2	18.9	31.3	12.8	13.2
Per cent. of value of all prop- erty in: —					
Land,	48.1	40.6	45.1	40.0	44.7
Buildings,	37.3	39.8	39.7	42.3	38.4
Implements and machinery,	4.4	6.5	5.3	6.4	5.7
Domestic animals, poultry and bees,	10.1	13.1	9.9	11.3	11.2
Average values: —					
All property per farm,	\$6,554 00	\$3,910 00	\$5,223 00	\$4,681 00	\$5,084 00
Land and buildings per farm,	5,600 00	3,146 00	4,429 00	3,854 00	4,225 00
Land per acre, 1910,	23 92	15 71	25 86	19 80	27 58
Land per acre, 1900,	16 86	12 41	16 52	15 33	23 46

¹ Indicates small change in county boundaries between 1900-10.

TABLE 2. — RECAPITULATION, WITH COMPARATIVE DATA FOR THE FIVE WESTERN COUNTIES, THE OTHER NINE COUNTIES AND THE STATE.

	Five Western Counties.	Other Counties in the State.	State.
Number of all farms, 1910,	19,220	17,697	36,917
Number of all farms, 1900,	20,372	17,343	37,715
Gain or loss, 1900-10 (per cent.),	Loss, 5.6	Gain, 2	Loss, 2.1
Land and farm area: —			
Approximate land area (acres),	2,841,600	2,303,360	5,144,960
Land in farms, 1910 (acres),	1,847,621	1,028,320	2,875,941
Land in farms, 1900 (acres),	2,105,785	1,041,279	3,147,064
Gain or loss, 1900-10 (per cent.),	Loss, 12.2	Loss, 1.2	Loss, 8.6
Improved land in farms, 1910 (acres),	700,326	464,175	1,164,501
Improved land in farms, 1900 (acres),	841,587	450,545	1,292,132
Gain or loss, 1900-10 (per cent.),	Loss, 16.7	Gain, 3	Loss, 9.8
Woodland in farms (acres),	682,379	382,174	1,064,553
Other unimproved land in farms (acres),	464,916	181,971	646,887
Per cent. of land area in farms,	65.0	44.6	55.9
Per cent. of farm land improved,	37.9	45.1	40.5
Average acres per farm,	96.1	58.1	77.9
Average improved acres per farm,	36.4	26.2	31.5
Per cent. per farm improved,	37.8	45.0	40.4
Value of farm property: —			
All farm property, 1910,	\$97,600,797	\$129,873,228	\$226,474,025
All farm property, 1900,	\$83,525,121	\$99,121,583	\$182,646,704
Gain or loss, 1900-10 (per cent.),	Gain, 16.8	Gain, 31	Gain, 24
Per cent. of value of all property in: —			
Land,	43.7	50.5	46.6
Buildings,	39.5	35.9	39.1
Implements and machinery,	5.7	4.9	5.1
Domestic animals, poultry and bees,	11.1	8.7	9.2

TABLE 3. — TOTAL VALUATION OF ALL AGRICULTURAL PRODUCTS AND OF CERTAIN SPECIFIED CLASSES IN THE FIVE WESTERN COUNTIES, WITH CERTAIN STATISTICS AS TO PRICES FROM 1895 TO 1910.

Total Value of All Agricultural Products.

	MASSACHUSETTS CENSUS.		United States Census, 1910.
	1895.	1905.	
Berkshire County,	\$4,365,318	\$6,642,058	\$2,606,422
Franklin County,	3,858,359	5,364,219	4,479,699
Hampden County,	3,780,042	5,255,131	3,832,287
Hampshire County,	3,968,231	5,791,506	4,509,449
Worcester County,	9,647,216	14,279,288	11,173,507
Total,	\$25,619,166	\$37,332,202	\$26,601,364 ¹

¹ The United States Census includes the great staples, but apparently not numerous garden, florist and other specialties, which in the aggregate are of so much importance in the State.

Valuation of All, and of Certain Specified Crops, 1910.

	All Crops.	Dairy Products.	Poultry and Eggs.	Honey and Wax.	Wool, etc.	Domestic Animals sold and slaughtered.
Berkshire County, .	\$2,221,180	\$149,831	\$188,062	\$211	\$7,880	\$39,258
Franklin County, .	2,734,978	805,886	276,007	2,213	9,642	650,973
Hampden County, .	2,342,710	776,211	348,180	1,631	2,419	361,136
Hampshire County, .	2,837,923	856,617	320,808	1,323	2,186	490,592
Worcester County, .	5,474,650	3,334,833	1,112,204	4,430	1,777	1,245,611
Total,	\$15,611,441	\$5,923,378	\$2,245,261	\$9,808	\$23,904	\$2,787,570

Wholesale Prices in Cities (Cornell Bulletin No. 341).

	1895.	1905.	1910.
Corn,	\$0 40	\$0 57	\$0 65
Potatoes,	43	40	43
Butter,	188	234	291
Eggs,	166	26	328

TABLE 3. — TOTAL VALUATION OF ALL AGRICULTURAL PRODUCTS, ETC.
— *Concluded.*

<i>Comparative Prices, All Products, 1840-1912.</i>										Per Cent.
1885 equals . . . . .	.	.	.	.	.	.	.	.	.	84
1890 equals . . . . .	.	.	.	.	.	.	.	.	.	83
1895 equals . . . . .	.	.	.	.	.	.	.	.	.	65
1900 equals . . . . .	.	.	.	.	.	.	.	.	.	75
1905 equals . . . . .	.	.	.	.	.	.	.	.	.	88
1912 equals . . . . .	.	.	.	.	.	.	.	.	.	119
Average of entire period equals . . . . .	.	.	.	.	.	.	.	.	.	100

TABLE 4. — AGRICULTURAL PRODUCTS IN THE FIVE WESTERN COUNTIES,
WITH THE PRODUCTION AND VALUE OF CERTAIN CROPS, 1895 AND
1905.*Corn.*

	1895.		1905.	
	Bushels.	Value.	Bushels.	Value.
Berkshire County,	218,628	\$81,347	168,390	\$75,425
Franklin County,	280,246	120,496	198,695	109,620
Hampden County,	280,522	143,084	230,304	129,717
Hampshire County,	295,515	134,278	285,376	154,960
Worcester County,	469,097	178,824	182,873	99,975
Total,	1,544,008	\$658,029	1,065,638	\$569,697

Oats.

	1895.		1905.	
	Bushels.	Value.	Bushels.	Value.
Berkshire County,	199,807	\$61,267	154,325	\$66,692
Franklin County,	17,071	5,319	8,632	3,945
Hampden County,	11,028	3,821	9,665	4,999
Hampshire County,	10,548	3,601	5,044	2,502
Worcester County,	15,789	5,357	25,712	11,434
Total,	254,243	\$79,365	203,378	\$89,572

TABLE 4. — AGRICULTURAL PRODUCTS, ETC. — *Continued.**Rye.*

	1895.		1905.	
	Bushels.	Value.	Bushels.	Value.
Berkshire County,	33,887	\$16,528	16,046	\$10,068
Franklin County,	7,352	3,944	3,002	2,333
Hampden County,	25,852	14,991	18,516	12,949
Hampshire County,	17,618	9,390	8,149	6,051
Worcester County,	8,556	6,153	4,700	4,004
Total,	93,265	\$51,006	50,413	\$35,405

Potatoes.

	1895.		1905.	
	Bushels.	Value.	Bushels.	Value.
Berkshire County,	506,470	\$170,033	287,756	\$221,248
Franklin County,	313,400	118,135	184,334	131,883
Hampden County,	471,088	180,947	286,396	224,250
Hampshire County,	452,065	149,428	304,526	211,606
Worcester County,	716,828	302,518	427,076	313,605
Total,	2,459,851	\$921,061	1,490,088	\$1,102,592

Onions.

	1895.		1905.	
	Bushels.	Value.	Bushels.	Value.
Berkshire County,	9,915	\$5,747	10,638	\$8,739
Franklin County,	191,330	50,861	351,444	176,852
Hampden County,	25,202	11,710	20,233	13,364
Hampshire County,	125,727	34,860	438,165	213,561
Worcester County,	21,474	10,870	35,166	24,043
Total,	373,648	\$114,048	855,646	\$436,559

TABLE 4. — AGRICULTURAL PRODUCTS, ETC. — *Continued.**Cabbages.*

	1895.		1905.	
	Heads.	Value.	Heads.	Value.
Berkshire County,	414,437	\$16,199	666,340	\$30,204
Franklin County,	262,973	8,411	302,303	12,719
Hampden County,	825,152	25,319	918,896	32,816
Hampshire County,	459,996	12,001	718,004	27,972
Worcester County,	1,340,663	47,915	1,690,192	69,935
Total,	3,303,221	\$109,845	4,395,735	\$173,646

Celery.

	1895.		1905.	
	Bunches.	Value.	Bunches.	Value.
Berkshire County,	61,839	\$5,497	161,060	\$13,719
Franklin County,	20,840	1,643	22,831	2,085
Hampden County,	173,070	13,260	2,492,181	181,425
Hampshire County,	18,585	1,841	30,776	2,757
Worcester County,	139,752	10,306	393,439	37,109
Total,	414,086	\$32,547	3,100,287	\$237,095

Squash.

	1895.		1905.	
	Pounds.	Value.	Pounds.	Value.
Berkshire County,	322,506	\$5,802	784,957	\$16,523
Franklin County,	399,750	4,665	937,584	13,622
Hampden County,	999,815	14,460	1,289,255	17,595
Hampshire County,	312,056	5,128	1,071,500	14,053
Worcester County,	2,423,174	26,114	4,513,962	60,176
Total,	4,457,301	\$56,169	8,597,258	\$121,969

TABLE 4. — AGRICULTURAL PRODUCTS, ETC. — *Concluded.**Tomatoes.*

	1895.		1905.	
	Bushels.	Value.	Bushels.	Value.
Berkshire County,	7,044	\$5,076	17,369	\$15,088
Franklin County,	4,926	2,809	10,241	7,729
Hampden County,	28,228	12,597	32,789	20,509
Hampshire County,	7,833	3,039	27,253	16,733
Worcester County,	40,712	24,606	76,641	65,819
Total,	88,743	\$48,127	164,293	\$125,878

Turnips (called Table Turnips).

	1895.		1905.	
	Bushels.	Value.	Bushels.	Value.
Berkshire County,	22,483	\$7,598	30,906	\$14,473
Franklin County,	4,919	1,621	16,995	8,002
Hampden County,	6,982	2,406	43,537	17,347
Hampshire County,	5,383	1,501	30,503	11,367
Worcester County,	29,278	11,854	78,381	41,197
Total,	69,045	\$24,980	200,322	\$92,386

Hay, Straw and Fodder.

	1895.	1905.
	Value.	Value.
Berkshire County,	\$1,254,531	\$1,506,221
Franklin County,	960,870	1,086,284
Hampden County,	931,100	1,015,508
Hampshire County,	1,012,963	1,131,439
Worcester County,	2,681,932	3,372,393
Total,	\$6,841,396	\$8,111,845

TABLE 5. — VALUE OF AGRICULTURAL PRODUCTS IN THE THIRTY-THREE TOWNS IN THE FIVE WESTERN COUNTIES WITHOUT RAILROAD OR RAILWAY TRANSPORTATION FACILITIES.

[The figures of value of products for 1875, as given in the contemporary State census reports for that year, were on a currency basis, but have been recast by the Bureau of Statistics on a gold basis, so as to make them comparable with the 1905 census figures.]

West of Berkshire Trolley System.

SPECIFIED TOWNS.	VALUE OF PRODUCTS.		Gain.	Percentage of Gain.
	1875.	1905.		
BERKSHIRE COUNTY.				
Alford,	\$64,429	\$112,089	\$47,060	74.0
Hancock,	74,654	134,549	59,895	80.2
Mount Washington,	20,546	30,282	9,736	47.4
New Ashford,	27,495	46,319	18,824	68.5

Between Fitchburg and Boston & Albany Railroad and Berkshire and Connecticut Valley Street Railways.

BERKSHIRE COUNTY.				
Peru,	\$46,607	\$113,564	\$66,957	143.7
Savoy,	93,520	157,272	63,752	68.2
Windsor,	83,663	193,976	110,313	131.9
FRANKLIN COUNTY.				
Ashfield,	127,505	253,049	125,544	98.5
Hawley,	63,660	196,828	133,168	209.2
HAMPSHIRE COUNTY.				
Chesterfield,	75,559	160,938	85,379	113.0
Cummington,	99,781	135,745	35,964	36.0
Goshen,	46,736	67,108	20,372	43.6
Plainfield,	66,424	200,911	134,487	202.5
Westhampton,	102,497	136,178	33,681	32.9
Worthington,	144,579	199,927	55,348	38.3

South of Boston & Albany Railroad and between Berkshire and Connecticut Valley Street Railways.

BERKSHIRE COUNTY.				
Monterey,	\$95,450	\$119,342	\$23,892	25.0
New Marlborough,	237,388	320,814	83,426	35.1
Otis,	51,946	101,412	49,466	95.2
Sandisfield,	117,789	204,426	86,637	73.6
Tyringham,	67,502	120,277	52,775	78.2

TABLE 5. — VALUE OF AGRICULTURAL PRODUCTS IN THE THIRTY-THREE TOWNS IN THE FIVE WESTERN COUNTIES WITHOUT RAILROAD OR RAILWAY TRANSPORTATION FACILITIES — *Concluded.*

South of Boston & Albany Railroad and between Berkshire and Connecticut Valley Street Railways — Concluded.

SPECIFIED TOWNS.	VALUE OF PRODUCTS.		Gain.	Percentage of Gain.
	1875.	1905.		
HAMPDEN COUNTY.				
Blandford,	146,300	245,751	99,451	68.0
Granville,	109,696	223,206	113,510	103.5
Tolland,	56,088	104,973	48,885	87.2

North of Fitchburg Railroad.

FRANKLIN COUNTY.				
Gill,	\$132,454	\$177,052	\$44,598	33.7
Heath,	77,423	161,814	84,391	109.0
Leyden,	85,054	138,823	53,769	63.2
Monroe,	20,599	38,889	18,290	88.8
Warwick,	64,309	122,820	58,511	91.0

South of Fitchburg, East of Connecticut Valley and West of Worcester Street Railways.

FRANKLIN COUNTY.				
Shutesbury,	\$49,055	\$72,913	\$23,858	48.6
WORCESTER COUNTY.				
Paxton,	62,152	115,970	53,818	86.6

South and East of Springfield Street Railway System.

HAMPDEN COUNTY.				
Hampden, ¹	—	\$220,566	—	—
Holland,	\$29,514	51,399	\$21,885	74.2
Wales,	43,748	64,784	21,036	48.1

¹ Established March 28, 1878, from part of Wilbraham.

Recapitulation.

Value of agricultural products of above towns: —

In 1875 equals	\$2,584,122
In 1905 equals	4,743,966
Gain, 1875–1905, equals	\$2,159,844, or 83.6 per cent.

APPENDIX H.

CITIES AND TOWNS OF THE FIVE WESTERN COUNTIES OF MASSACHUSETTS,
WITH THE AMOUNTS OF MONEY EXPENDED BY EACH FOR THE TRANS-
PORTATION OF SCHOOL CHILDREN DURING THE LAST TWO FISCAL
YEARS.

	1912-13.	1911-12.		1912-13.	1911-12.
BERKSHIRE COUNTY.			BERKSHIRE COUNTY — <i>Con.</i>		
Adams,	\$273 05	\$503 74	Washington, . . .	-	-
Alford,	-	-	West Stockbridge, .	\$973 97	\$804 94
Becket,	49 00	27 20	Williamstown, . .	222 00	114 00
Cheshire,	1,292 50	1,309 48	Windsor,	351 50	280 37
Clarksburg, . . .	-	-	Total,	\$15,755 79	\$15,245 23
Dalton,	490 50	150 00	FRANKLIN COUNTY.		
Egremont,	-	-	Ashfield,	\$205 00	\$112 60
Florida,	7 00	261 50	Bernardston, . . .	568 75	923 30
Great Barrington, .	1,462 15	1,899 15	Buckland,	474 60	509 00
Hancock,	213 60	156 00	Charlemont, . . .	584 75	742 62
Hinsdale,	260 00	227 25	Colrain,	530 20	725 10
Lanesborough, . .	391 65	414 35	Conway,	887 35	772 94
Lee,	1,525 17	1,098 50	Deerfield,	2,843 65	3,164 00
Lenox,	656 80	628 30	Erving,	678 34	625 15
Monterey,	429 90	645 90	Gill,	548 50	505 50
Mount Washington, .	-	-	Greenfield,	2,268 64	2,539 65
New Ashford, . . .	194 00	123 20	Hawley,	-	1 50
New Marlborough, .	596 50	364 50	Heath,	862 05	986 18
North Adams, . . .	1,167 50	1,342 50	Leverett,	742 55	681 25
Otis,	191 00	164 00	Leyden,	-	-
Peru,	161 90	180 00	Monroe,	90 75	69 50
Pittsfield,	2,055 00	1,970 00	Montague,	3,636 02	3,266 81
Richmond,	295 10	392 76	New Salem, . . .	696 30	441 95
Sandisfield,	446 05	347 83	Northfield,	1,005 50	877 34
Savoy,	-	-	Orange,	3,164 00	3,185 60
Sheffield,	100 00	109 50	Rowe,	269 20	219 40
Stockbridge, . . .	1,908 30	1,700 25	Shelburne,	637 50	964 40
Tyringham,	41 65	30 00	Shutesbury, . . .	351 00	526 83

CITIES AND TOWNS OF THE FIVE WESTERN COUNTIES OF MASSACHUSETTS,
WITH THE AMOUNTS OF MONEY EXPENDED BY EACH FOR THE TRANS-
PORTATION OF SCHOOL CHILDREN DURING THE LAST TWO FISCAL
YEARS — *Continued.*

	1912-13.	1911-12.		1912-13.	1911-12.
FRANKLIN COUNTY — <i>Con.</i>			HAMPSHIRE COUNTY — <i>Con.</i>		
Sunderland, . . .	\$1,961 20	\$2,145 35	Cummington, . . .	\$256 60	\$90 00
Warwick, . . .	1,442 50	1,828 00	Easthampton, . . .	2,259 15	1,718 60
Wendell, . . .	458 15	443 75	Enfield, . . .	1,196 50	1,178 47
Whately, . . .	274 00	288 00	Goshen, . . .	300 80	271 10
Total, . . .	\$25,180 50	\$26,545 57	Granby, . . .	1,163 30	1,372 13
HAMPDEN COUNTY.			Greenwich, . . .	666 00	809 60
Agawam, . . .	\$538 20	\$613 98	Hadley, . . .	232 06	891 50
Blandford, . . .	247 60	224 20	Hatfield, . . .	250 00	56 15
Brimfield, . . .	1,102 50	935 08	Huntington, . . .	715 00	393 30
Chester, . . .	82 74	122 26	Middlefield, . . .	—	55 10
Chicopee, . . .	3,502 10	3,089 25	Northampton, . . .	1,106 21	906 00
East Longmeadow, . . .	—	—	Pelham, . . .	107 00	133 50
Granville, . . .	665 80	765 30	Plainfield, . . .	—	—
Hampden, . . .	150 00	140 00	Prescott, . . .	532 60	519 50
Holland, . . .	497 30	237 00	South Hadley, . . .	2,128 50	2,087 50
Holyoke, . . .	1,071 10	882 00	Southampton, . . .	52 54	396 45
Longmeadow, . . .	560 00	300 00	Ware, . . .	1,069 30	1,002 89
Ludlow, . . .	2,975 10	2,918 45	Westhampton, . . .	204 25	—
Monson, . . .	272 75	331 90	Williamsburg, . . .	641 00	578 00
Montgomery, . . .	453 60	445 00	Worthington, . . .	623 00	341 50
Palmer, . . .	1,961 00	1,730 83	Total, . . .	\$15,929 31	\$15,335 05
Russell, . . .	115 00	164 60	WORCESTER COUNTY.		
Southwick, . . .	—	—	Ashburnham, . . .	\$509 35	\$354 20
Springfield, . . .	1,295 00	1,540 00	Athol, . . .	2,635 90	2,527 31
Tolland, . . .	877 05	951 60	Auburn, . . .	187 70	82 95
Wales, . . .	586 40	571 00	Barre, . . .	953 51	896 61
West Springfield, . . .	700 00	350 00	Berlin, . . .	798 20	425 10
Westfield, . . .	3,118 04	3,797 50	Blackstone, . . .	—	—
Wilbraham, . . .	198 00	172 00	Bolton, . . .	2,554 50	2,065 64
Total, . . .	\$20,969 28	\$20,281 95	Boylston, . . .	2,424 50	2,330 00
HAMPSHIRE COUNTY.			Brookfield, . . .	68 40	55 80
Amherst, . . .	\$1,075 30	\$1,133 66	Charlton, . . .	160 50	166 50
Belchertown, . . .	553 20	651 90	Clinton, . . .	—	—
Chesterfield, . . .	797 00	747 20	Dana, . . .	240 15	379 20
			Douglas, . . .	555 50	477 25

CITIES AND TOWNS OF THE FIVE WESTERN COUNTIES OF MASSACHUSETTS,
WITH THE AMOUNTS OF MONEY EXPENDED BY EACH FOR THE TRANS-
PORTATION OF SCHOOL CHILDREN DURING THE LAST TWO FISCAL
YEARS — *Concluded.*

	1912-13.	1911-12.		1912-13.	1911-12.
WORCESTER COUNTY — <i>Con.</i>			WORCESTER COUNTY — <i>Con.</i>		
Dudley,	\$27 00	—	Phillipston,	\$442 00	\$464 00
Fitchburg,	2,162 25	\$1,789 00	Princeton,	493 10	589 73
Gardner,	1,772 75	1,471 50	Royalston,	1,086 04	1,074 60
Grafton,	3,644 35	3,447 57	Rutland,	1,742 85	1,595 65
Hardwick,	3,480 83	2,534 53	Shrewsbury,	427 00	509 25
Harvard,	4,035 00	3,632 00	Southborough,	2,182 64	2,149 25
Holden,	692 56	895 40	Southbridge,	1,306 00	699 70
Hopedale,	415 00	343 25	Spencer,	1,137 36	1,060 78
Hubbardston,	819 25	977 05	Sterling,	503 20	604 15
Lancaster,	1,657 55	1,714 20	Sturbridge,	1,989 00	2,207 00
Leicester,	1,730 50	1,590 25	Sutton,	432 00	432 00
Leominster,	1,962 25	1,912 29	Templeton,	1,852 60	1,568 75
Lunenburg,	595 90	631 85	Upton,	1,511 75	1,399 55
Mendon,	936 41	838 40	Uxbridge,	475 57	322 00
Milford,	1,782 71	1,659 76	Warren,	3,312 25	3,169 10
Millbury,	844 20	745 00	Webster,	275 00	280 00
New Braintree,	357 00	396 00	West Boylston,	2,315 00	2,304 30
North Brookfield,	1,737 60	1,667 00	West Brookfield,	1,184 50	1,179 50
Northborough,	2,253 70	1,587 85	Westborough,	2,152 86	2,250 28
Northbridge,	812 17	925 09	Westminster,	377 50	719 50
Oakham,	—	—	Winchendon,	1,818 98	1,443 15
Oxford,	1,453 00	1,023 00	Worcester,	597 00	762 25
Paxton,	630 00	657 50	Total,	\$74,102 01	\$68,428 44
Petersham,	1,597 62	1,444 90			

Total School Transportation Expense for Five Counties.

For 1911-12,	\$145,836 24
For 1912-13,	151,936 89

APPENDIX I.

STREET RAILWAY TRANSPORTATION IN MASSACHUSETTS, WITH STATISTICS OF MILES OF RAILWAY, PASSENGERS CARRIED AND FINANCIAL CONDITION, 1856-1914.

YEARS ENDING SEPTEMBER 30.	Number of Companies.	Miles of Rail-way.	Passengers carried.	Gross Earnings, excluding Rents.	Capital Stock.	Funded Debt.	Unfunded Debt.	Total Gross Capital-ization.	Cash and Current Assets.	Capital Stock and Net Debt.	Dividends declared.
Nov. 30, 1856,	5	21	1,392,610	\$120,208	\$679,160	-	\$236,020	\$915,180	\$37,681	\$877,499	\$6,288
1857,	7	31	6,011,750	537,341	910,342	-	395,175	1,305,517	20,393	1,285,124	106,520
1858,	12	47	7,648,926	545,913	1,913,400	-	298,784	2,212,184	198,279	2,013,905	78,330
1859,	15	64	11,880,877	710,841	1,884,550	-	421,994	2,306,544	224,748	2,081,796	134,987
Nov. 30, 1860,	21	89	13,695,193	731,137	2,561,500	-	486,815	3,048,315	218,134	2,830,181	140,749
Nov. 30, 1861,	22	124	13,725,758	709,143	2,852,200	-	627,739	3,479,939	251,639	3,228,300	132,924
Nov. 30, 1862,	22	120	14,854,885	807,842	3,037,800	-	790,546	3,828,346	134,833	3,693,513	147,024
Nov. 30, 1863,	22	157	19,528,943	1,030,801	3,704,500	-	1,079,960	4,784,460	182,453	4,602,007	207,211
Nov. 30, 1864,	20	142	27,070,624	1,431,943	4,013,000	-	1,091,210	5,104,210	402,099	4,702,111	189,424
1865,	19	137	26,631,414	1,549,772	4,086,800	-	1,264,658	5,351,458	196,809	5,154,649	133,572
Nov. 30, 1866,	19	147	26,232,330	1,692,028	4,410,800	-	979,741	5,390,541	232,984	5,157,557	112,303
Nov. 30, 1867,	20	144	27,718,777	1,754,904	4,745,800	-	1,039,932	5,785,732	199,564	5,586,168	247,877

¹ Not tabulated.

STREET RAILWAY TRANSPORTATION IN MASSACHUSETTS, WITH STATISTICS OF MILES OF RAILWAY, PASSENGERS CARRIED AND FINANCIAL CONDITION, 1856-1914 — *Continued.*

YEARS ENDING SEPTEMBER 30.	Number of Companies.	Miles of Rail-way.	Passengers carried.	Gross Earnings, excluding Rents.	Capital Stock.	Funded Debt.	Unfunded Debt.	Total Gross Capital-ization.	Cash and Current Assets.	Capital Stock and Net Debt.	Dividends declared.
Nov. 30, 1868,	22	142	29,294,503	\$1,821,299	\$4,945,800	— ¹	\$1,073,006	\$6,018,806	\$189,146	\$5,829,660	\$243,127
Nov. 30, 1869,	22	141	32,480,505	2,021,164	5,088,800	— ¹	962,573	6,051,373	219,689	5,831,684	250,817
Ten months, September 30, 1870,	23	139	27,224,337	1,711,634	5,098,800	— ¹	1,128,857	6,227,657	240,578	5,987,079	193,679
1871,	23	161 ²	36,776,095	2,234,350	5,051,930	\$1,040,400	830,332	6,922,662	525,524	6,397,138	281,418
1872,	24	176 ²	40,274,169	2,432,551	5,043,534	474,900 ³	1,010,628	6,529,062	— ¹	6,529,062	299,485
1873,	29	204 ²	43,557,636	2,471,884	5,511,350	434,400	1,710,697	7,656,447	— ¹	7,656,447	228,425
1874,	30	210 ²	50,058,979	2,802,367	5,538,125	827,900	1,745,846	8,111,871	— ¹	8,111,871	314,504
1875,	31	217 ²	50,441,776	2,876,609	5,596,275	1,606,842	1,111,274	8,314,391	— ¹	8,314,391	313,554
1876,	30	206 ²	51,361,972	2,890,416	5,664,350	1,690,490	1,141,586	8,496,426	— ¹	8,496,426	342,001
1877,	31	202	52,203,472	2,838,129	5,782,950	1,968,990	1,140,893	8,892,833	785,328	8,107,505	332,810
1878,	29	198	54,215,460	2,961,774	5,465,750	2,319,990	832,885	8,618,635	682,867	7,935,758	328,096
1879,	29	208	57,704,437	3,051,994	5,707,750	2,354,742	839,577	8,902,069	737,094	8,164,975	374,661
1880,	29	223	68,631,842	3,608,161	6,144,000	2,269,800	1,124,342	9,538,142	868,587	8,669,555	383,119
1881,	30	245	75,163,749	3,914,349	6,653,750	2,072,200	1,661,292	10,387,242	887,260	9,499,982	459,895
1882,	30	273	83,923,577	4,384,729	7,001,580	2,290,200	2,121,972	11,413,752	818,081	10,595,671	455,246
1883,	29	281	88,229,796	4,562,637	7,524,700	2,897,200	1,534,467	11,956,367	818,898	11,137,469	437,879
1884,	33	309	94,894,259	4,884,797	7,732,200	2,899,200	1,779,231	12,410,631	795,295	11,615,335	444,090

1885,	.	.	.	.	.	348	100,746,786	5,169,132	8,077,100	3,455,300	1,490,088	13,022,488	835,173	12,187,315	507,044
1886,	.	.	.	.	.	408	112,087,384	5,853,310	9,125,645	4,097,242	1,367,487	14,590,374	1,276,313	13,314,061	494,070
1887,	.	.	.	.	.	470	124,787,328	6,439,269	10,096,980	4,550,242	1,897,466	16,544,688	1,189,687	15,355,001	530,920
1888,	.	.	.	.	.	534	134,478,319	6,841,064	10,894,850	5,134,042	2,435,209	18,464,101	1,227,020	17,237,081	625,617
1899,	.	.	.	.	.	574	148,294,409	7,540,319	12,340,740	5,399,042	3,100,198	20,839,980	1,371,883	19,468,097	838,645
1890,	.	.	.	.	.	612	164,873,846	8,365,548	14,879,130	6,027,942	4,704,917	25,611,989	2,184,886	23,427,103	963,154
1891,	.	.	.	.	.	672	176,090,189	8,879,321	19,553,932	7,316,500	4,340,316	31,210,768	3,713,164	27,497,604	1,100,015
1892,	.	.	.	.	.	750	193,760,783	9,793,727	23,540,536	9,870,150	5,182,753	38,593,439	2,931,786	34,661,653	1,582,697
1893,	.	.	.	.	.	874	213,552,009	10,832,174	25,883,575	14,109,000	9,597,113	49,589,688	2,939,010	46,650,678	1,716,638
1894,	.	.	.	.	.	929	220,464,099	11,126,734	26,971,275	19,188,000	6,861,020	53,020,295	3,825,887	49,194,408	1,610,886
1895,	.	.	.	.	.	75	259,794,308	13,206,046	27,906,685	22,284,500	5,165,896	55,357,081	2,428,150	52,928,931	1,606,196
1896,	.	.	.	.	.	83	292,358,943	14,852,952	30,727,818	24,236,000	6,153,896	61,117,714	1,911,651	59,206,063	1,802,847
1897,	.	.	.	.	.	93	308,684,224	15,837,299	32,670,273	28,007,600	5,805,541	66,483,414	3,370,650	63,112,764	1,965,243
1898,	.	.	.	.	.	103	330,889,629	17,028,641	38,933,917	29,132,700	7,823,008	75,889,625	7,130,861	68,758,764	2,076,233
1899,	.	.	.	.	.	116	356,724,213	18,298,650	41,380,143	29,928,500	11,971,248	83,279,891	6,053,677	77,226,214	2,318,398
1900,	.	.	.	.	.	118	395,027,198	20,165,743	48,971,168	34,373,000	11,718,778	95,062,946	10,347,849	84,715,097	2,409,874
1901,	.	.	.	.	.	119	433,526,935	21,942,480	54,069,933	34,312,500	15,215,610	103,598,043	3,986,857	99,611,186	3,417,117
1902,	.	.	.	.	.	106	465,474,382	23,652,341	60,036,328	37,751,000	21,654,464	119,441,792	6,370,679	113,071,113	3,138,711
1903,	.	.	.	.	.	109	504,662,243	25,743,377	68,404,480	41,411,500	23,305,432	133,121,412	10,455,046	122,666,366	3,586,248
1904,	.	.	.	.	.	102	520,056,511	26,440,496	68,542,038	46,674,884	20,832,564	136,049,486	6,554,738	129,494,748	3,214,496
1905,	.	.	.	.	.	98	532,731,017	27,288,610	70,326,955	55,780,500	19,495,758	145,603,243	12,315,705	133,287,538	3,174,505
1906,	.	.	.	.	.	90	581,450,906	29,899,696	71,216,925	58,176,000	20,279,338	149,672,263	10,447,216	139,225,047	3,554,073

¹ Not tabulated.² Included sidings.³ Nine months' report.

STREET RAILWAY TRANSPORTATION IN MASSACHUSETTS, WITH STATISTICS OF MILES OF RAILWAY, PASSENGERS CARRIED AND FINANCIAL CONDITION, 1856-1914 — *Concluded.*

YEARS ENDING SEPTEMBER 30.	Number of Companies.	Miles of Railway.	Passengers carried.	Gross Earnings, excluding Rents.	Capital Stock.	Funded Debt.	Unfunded Debt.	Total Gross Capitalization.	Cash and Current Assets.	Capital Stock and Net Debt.	Dividends declared.
1907,	85	2,661	600,695,816	\$30,851,334	\$73,280,155	\$59,339,500	\$21,223,249	\$153,847,904	\$5,855,412	\$147,992,492	\$3,721,388
1908,	81	2,675	602,400,874	30,959,139	74,737,505	66,348,500	20,948,965	162,034,970	8,170,683	153,864,287	3,950,965
1909,	78	2,686	624,532,753	32,150,747	80,728,880	68,078,000	19,821,271	168,628,151	11,959,339	156,668,812	4,120,223
June 30, 1910, ¹	73	2,703	469,330,784	24,256,890	84,345,065	67,762,000	23,363,424	175,470,489	8,785,108	166,685,381	2,767,315
1911,	66	2,721	683,362,717	35,576,096	86,639,175	71,508,700	22,220,219	180,368,094	8,231,929	172,136,165	4,788,907
1912,	64	2,744	701,798,274	36,902,225	89,118,975	77,706,700	26,834,394	193,660,069	7,939,172	185,720,897	4,916,371
1913,	54	2,832	738,522,280	38,493,909	97,284,375	85,615,700	22,249,708	205,149,733	10,795,460	194,354,323	5,031,728
1914,	53	2,832	766,628,535	40,087,425	98,194,775	86,575,700	22,204,027	206,974,502	8,189,039	198,785,463	5,109,369

¹ Nine months' report.

APPENDIX J.

A questionnaire, covering all phases of trolley and highway needs and possibilities, was submitted to the selectmen and mayors in the five western counties for official definite information as to the conditions in their respective localities. A skeleton digest of the answers received on trolley matters is here given. The questionnaires in full have been filed with the Massachusetts Highway Commission at Boston, where they are open for inspection.

Blanks indicate that the questions were not answered.

RECAPITULATION OF QUESTIONNAIRE TO TOWNSHIPS AND CITIES.

PLACE.	A	B	C	D	E	F	G	H	I	J	K	L	M
	Popu- lation, Census 1910.	Popu- lation (Esti- mated), 1914.	Valu- ation, 1914.	Tax Rate per \$1,000.	Trolley wanted?	Location suggested.	Approx- imate Length.	Fi- nanced in Local- ity?	Can Town assist?	Has Fi- nancing been at- tempted?	Would the Line Pay?	Has Es- timate of Cost ever been made?	By whom, and what Results?
Adams (Berkshire).	13,026	13,000	-	-	-	- - - - -	-	-	-	-	-	-	-
Agawam (Hampden).	3,501	4,300	-	-	-	- - - - -	-	-	-	-	-	-	-
Alford (Berkshire).	275	315	\$200,400	\$17 90	Yes.	(1) From Great Barrington, via the village of Alford, to the Boston & Albany Railroad at State line. (2) From Great Barrington, via the Green River valley, through the towns of Egremont and Alford, to the New York line, thence to Chatham, New York.	8 miles. 8 miles.	No. No.	No.	No.	Prob- ably.	No.	-

RECAPITULATION OF QUESTIONNAIRE TO TOWNSHIPS AND CITIES — *Continued.*

PLACE.	A Popu- lation, Census 1910.	B Popu- lation (Esti- mated), 1914.	C Valu- ation, 1914.	D Tax Rate per \$1,000.	E Trolley wanted?	F Location suggested.	G Approx- imate Length.	H Fi- nanced in Local- ity?	I Can Town assist?	J Has Fi- nancing been at- tempted?	K Would the Line pay?	L Has Es- timate of Cost ever been made?	M By whom, and what Results?
Amherst (Hampshire).	5,112	5,400	-	-	-	-	-	-	-	-	-	-	-
Ashburnham (Worcester).	2,107	2,200	-	-	-	-	-	-	-	-	-	-	-
Ashby (Middlesex).	885	900	\$658,906	\$17 50	No.	-	-	-	-	-	-	-	-
Ashfield (Franklin).	959	-	838,305	19 50	No.	-	-	-	-	-	-	-	-
Athol (Worcester).	8,536	9,000	-	-	-	-	-	-	-	-	-	-	-
Auburn (Worcester).	2,420	2,800	1,730,000	15 40	Yes.	Extension of Trowbridgeville line outward through Boyce Street.	1½ mile.	No.	No.	Not known.	Not stated.	Not known.	-
Barre (Worcester).	2,957	3,000	-	-	-	-	-	-	-	-	-	-	-
Becket (Berkshire).	959	1,000	651,934	18 00	Yes.	From a point in West Becket on the Lee-Huntington line, south through Otis, Sandisfield and the Farmington valley, to the Con- necticut line.	13 miles.	No.	No.	Yes.	Yes.	Not known.	-
Belchertown (Hampshire).	2,054	2,200	982,330	20 00	Yes.	From present trolley line in South Hadley Falls, via Granby, to Belchertown, thence northerly to "Warren's Corner," thence east- erly to Enfield Road, direct to Enfield.	17 miles.	No.	No.	Not known.	Yes, in the future.	Not known.	-

Berlin (Worcester).	904	-	-	-	-	-	-	-	-	-	-	-	-	-
Bernardston (Franklin).	741	800	567,411	17 20	No.	-	-	-	-	-	-	-	-	-
Blackstone (Worcester).	5,648	5,648	2,453,285	22 10	Yes.	From the State line through Rath- bun Street to Elm Street, East Blackstone, thence to Blackstone Street into the town of Mendon, to Hopedale, to Milford.	9 miles.	Partly.	Partly.	No.	Yes.	No.	No.	-
Blandford (Hampden).	717	700	700,000 ¹	21 00	Yes.	From a point on present Lee-Hun- tington line, running southerly near Blandford village, through the town of Russell, to connect with the present trolley near Woronoco Park in Westfield. This was the line proposed as the continuation of the present Lee-Huntington line, instead of the present line down into Hun- ington.	7 miles.	No.	Uncer- tain.	Yes. By Berk- shire Street Railway Com- pany.	Yes.	No.	No.	By Western Massa- chusetts Con- struc- tion Com- pany.
Bolton (Worcester).	764	764	-	-	-	-	-	-	-	-	-	-	-	-
Boylston (Worcester).	714	850	544,894	20 90	No.	-	-	-	-	-	-	-	-	-
Brimfield (Hampden).	866	890	508,700	15 75	No.	-	-	-	-	-	-	-	-	-
Brookfield (Worcester).	2,204	-	-	-	-	-	-	-	-	-	-	-	-	-
Buckland (Franklin).	1,573	1,500	-	-	-	-	-	-	-	-	-	-	-	-
Charlemont (Franklin).	1,001	1,000	584,799	24 00	No.	-	-	-	-	-	-	-	-	-
Charlton (Worcester).	2,022	2,000	1,440,680	17 30	Yes.	From ear barn in Charlton City through the village of said city, thence via State road to Charlton depot, thence to Spencer.	9½ miles.	-	Not known.	No.	Yes.	Yes.	Yes.	By Barnes & Howard.

¹ Approximate.

RECAPITULATION OF QUESTIONNAIRE TO TOWNSHIPS AND CITIES — *Continued.*

PLACE.	A Popu- lation, Census 1910.	B Popu- lation (Esti- mated), 1914.	C Valu- ation, 1914.	D Tax Rate per \$1,000.	E Trolley wanted?	F Location suggested.	G Approx- imate Length.	H Fi- nanced in Local- ity?	I Can Town assist?	J Has Fi- nancing been at- tempted?	K Would the Line pay?	L Has Es- timate of Cost ever been made?	M By whom, and what Results?
Cheshire (Berkshire).	1,508	1,500	\$900,000 ¹	\$16 80	No.	- - -	-	-	-	-	-	-	-
Chester (Hampden).	1,377	1,450	-	-	-	- - -	-	-	-	-	-	-	-
Chesterfield (Hampshire).	536	550	362,691	17 00	Yes.	From Huntington to Cummington via West Chesterfield village.	18 miles.	No.	Yes.	-	No, except as feeder to an ex- isting line.	Yes.	Not known.
Chicopee (Hampden).	25,401	-	18,816,960	18 70	Yes.	(1) From end of Glenwood line at Chicopee Junction through underpass via West Springfield bridge and Wayside Avenue to Springfield & Holyoke trolley line. (2) Extension of East Street line, Chicopee Falls, by East and Butler streets to Page Boulevard, to connect with St. James Avenue trolley line in Springfield. (3) From a point in Willimansett on the Holyoke Street Railway through underpass and up Pros- pect and Montcalm streets to Holyoke Street Railway line on Britton Street.	3,000 feet. 1 mile. 2 miles.	No. -	No. -	No. -	No. Yes. Eventu- ally.	No. -	No. -
Clarksburg (Berkshire).	1,207	1,000	-	-	-	- - -	-	-	-	-	-	-	-
Clinton (Worcester).	13,075	14,000	-	-	-	- - -	-	-	-	-	-	-	-

Colrain (Franklin).	1,741	1,900	900,162	19 00	No.	-	-	-	-	-	-
Conway (Franklin).	1,230	1,250	750,000 ¹	18 00	Yes.	From Conway to Ashfield along main highway through South Ashfield to Plainfield, to Savoy, to Adams, to North Adams.	36 miles.	No.	Not known.	No.	No.
Cummington (Hampshire).	637	675	357,670	19 00	Yes.	From Williamsburg via Goshen and Swift River to Cummington.	12 miles.	No.	Perhaps.	No.	Un- known.
Dalton (Berkshire).	3,568	-	-	-	-	-	-	-	-	-	-
Dana (Worcester).	736	-	445,970	21 60	No.	-	-	-	-	-	-
Deerfield (Franklin).	2,209	-	-	-	-	-	-	-	-	-	-
Dudley (Worcester).	4,267	-	-	-	-	-	-	-	-	-	-
Douglas (Worcester).	2,152	-	-	-	-	-	-	-	-	-	-
Easthampton (Hampshire).	8,524	9,000	7,494,160	19 00	Yes.	From junction of Northampton Street Railway, at corner of Main Street and Greenwood Court, via Main Street to Southampton.	4 miles.	No.	Probably not.	Yes.	Un- known.
East Long- meadow (Hampden).	1,553	2,000	1,256,140	17 30	Yes.	From present trolley terminus to Baptist village on Hampden Road.	2 miles.	Doubtful.	No.	Yes.	Un- known.
Egremont (Berkshire).	605	680	-	-	-	-	-	-	-	-	-
Enfield (Hampshire).	874	900	-	-	-	-	-	-	-	-	-
Erving (Franklin).	1,148	1,000	1,076,742	13 50	Yes.	From Orange via West Orange, Wendell depot, Erving and Farley, to Millers Falls.	11 miles.	No.	Possibly.	Yes.	Yes. By Chas. W. Abercrombie, \$300,000.

¹ Approximate.

[illegible]

RECAPITULATION OF QUESTIONNAIRE TO TOWNSHIPS AND CITIES — *Continued.*

PLACE.	A Popu- lation, Census 1910.	B Popu- lation (Esti- mated), 1914.	C Valu- ation, 1914.	D Tax Rate per \$1,000.	E Trolley wanted?	F Location suggested.	G Approx- imate Length.	H Fi- nanced in Local- ity?	I Can Town assist?	J Has Fi- nancing been at- tempted?	K Would the Line pay?	L Has Es- timate of Cost ever been made?	M By whom, and what Results?
Phillipston (Worcester).	426	426	\$311,753	\$20 50	No.	-	-	-	-	-	-	-	-
Pittsfield (Berkshire).	32,121	-	-	-	-	-	-	-	-	-	-	-	-
Plainfield (Hampshire).	406	386	194,882	22 00	Yes.	From Williamsburg to Cumming- ton.	12 miles.	No.	Doubt- ful.	Un- known.	No.	No.	-
Prescott (Hampshire).	320	325	-	-	-	-	-	-	-	-	-	-	-
Princeton (Worcester).	818	800	1,485,128	16 50	No.	-	-	-	-	-	-	-	-
Richmond (Berkshire).	650	675	650,000	21 00	Yes.	From Pittsfield to West Stock- bridge.	11 miles.	-	Pos- sibly.	Yes.	No.	No.	-
Rowe (Franklin).	456	478	510,000	23 50	Yes.	No location suggested.	-	No.	No.	No.	No.	Un- known.	-
Royalston (Worcester).	792	800	748,477	18 00	No.	-	-	-	-	-	-	-	-
Russell (Hampden).	965	1,000	1,724,000	15 50	Yes.	From the present Lee-Huntington trolley line in Blandford, over Russell Mountain, to the present trolley line in Westfield, being the alternative route once pro- posed for the completion of what is now the Lee-Huntington.	13 miles.	No.	Prob- ably.	Yes.	Yes.	Yes.	By the New Haven Railroad Feasible.

	1,743	1,800	917,325	20 00	Yes.		From Jefferson, in the town of Holden, to Rutland Center, thence either (1) through West Rutland, Oakham and Barre to Athol, or (2) through North Rutland and Hubbardston to Gardner.	-	No.	Pos- sibly.	Yes,	Yes.	No.	-
Rutland (Worcester).														
Sandisfield (Berkshire).	566	-	-	-	-	-	-	-	-	-	-	-	-	-
Savoy (Berkshire).	503	500	194,895	26 00	Yes.	30 miles.	From Adams, through Cheshire, Savoy Hollow, West Cumming- ton, Cummington and West Chesterfield to Huntington.	No.	No.	Prob- ably not.	Yes.	No.	Un- known.	-
Sheffield (Berkshire).	1,817	1,800	-	-	-	-	-	-	-	-	-	-	-	-
Shelburne (Franklin).	1,498	-	-	-	-	-	-	-	-	-	-	-	-	-
Shrewsbury (Worcester).	1,946	1,960	-	-	-	-	-	-	-	-	-	-	-	-
Shutesbury (Franklin).	267	267	344,102	14 00	Yes.	16 miles.	From North Amherst via Cushman and East Leverett to Shutesbury Center, thence northerly to Lake Wyola, thence over Wendell Hill to Orange, or to connect at Wen- dell depot with the proposed line from Orange to Millers Falls.	No.	No.	Prob- ably.	No.	Not at start.	No.	-
Southampton (Hampshire)	870	870	528,000	20 00	Yes.	7 to 12 miles.	From Easthampton via Southamp- ton to Westfield.	No.	No.	Un- known.	No.	Yes.	No.	-
Southborough (Worcester).	1,745	-	2,140,097	12 40	No.	-	-	-	-	-	-	-	-	-
Southbridge (Worcester).	12,592	14,000	7,294,000	21 00	Yes.	20 miles.	(1) From Southbridge south to the Connecticut State line, thence via North Woodstock to Putnam, Conn. (2) From Southbridge to East Brimfield, to Wales to the Con- necticut State line, thence to Staffordville, Stafford and Staf- ford Springs.	Partly.	No.	-	No.	Doubt- ful.	No.	-
						15 miles.		-	-	-	-	Yes.	-	-

RECAPITULATION OF QUESTIONNAIRE TO TOWNSHIPS AND CITIES — *Continued.*

PLACE.	A	B	C	D	E	F	G	H	I	J	K	L	M
	Popu- lation, Census 1910.	Popu- lation (Esti- mated), 1914.	Valu- ation, 1914.	Tax Rate per \$1,000.	Trolley wanted?	Location suggested.	Approx- imate Length.	Fi- nanced in Local- ity?	Can Town assist?	Has Fi- nancing been at- tempted?	Would the Line pay?	Has Es- timate of Cost ever been made?	By whom, and what Results?
South Hadley (Hampshire).	4,894	-	-	-	-	-	-	-	-	-	-	-	-
Southwick (Hampden).	1,020	1,300	\$907,000	\$16 00	Yes.	(1) From Agawam via Southwick to Granville. (2) From Westfield via Southwick to Granville.	10 miles. 10 miles.	No.	Un- certain.	Yes.	Yes.	Un- known.	-
Spencer (Worcester).	6,740	6,700	3,500,000	15 50	No.	-	-	-	-	-	-	-	-
Springfield (Hampden).	88,926	104,989	-	-	-	-	-	-	-	-	-	-	-
Sterling (Worcester).	1,359	1,400	1,270,940	14 70	Yes.	From Sterling to Clinton.	4 miles.	Doubt- ful.	Prob- ably.	No.	Yes.	No.	-
Stockbridge (Berkshire).	1,933	1,900	5,000,000	17 10	Yes.	From Stockbridge to West Stock- bridge.	5 miles.	Doubt- ful.	Un- known.	Un- known.	Not at start.	No.	-
Sturbridge (Worcester).	1,957	-	-	-	-	-	-	-	-	-	-	-	-
Sunderland (Franklin).	1,047	1,100	-	16 00	Yes.	From Sunderland village to connect with the present street railway at Sugarloaf Mountain.	1 mile.	No.	Pos- sibly.	No.	No.	-	-
Sutton (Worcester).	3,078	-	-	-	-	-	-	-	-	-	-	-	-
Templeton (Worcester).	3,756	4,000	1,974,746	22 20	No.	-	-	-	-	-	-	-	-

Tolland (Hampden).	180	180	260,684	14 50	Yes.	Farmington valley line from West Becket south through Otis and Sandisfield to the Connecticut line.	-	No.	Prob- ably.	Yes.	Yes.	No.	-
Tyringham (Berkshire).	382	390	361,507	19 30	No.	-	-	-	-	-	-	-	-
Upton (Worcester).	2,071	2,000	-	-	-	-	-	-	-	-	-	-	-
Uxbridge (Worcester).	4,671	5,000	4,025,000	19 50	No.	-	-	-	-	-	-	-	-
Wales (Hampden).	345	345	259,358	13 70	Yes.	From present trolley line in Brim- field to Wales.	4 miles.	No.	Perhaps.	No.	Yes, as part of line to Stafford, Conn.	Un- known.	-
Ware (Hampshire).	8,774	9,000	-	-	-	-	-	-	-	-	-	-	-
Warren (Worcester).	4,188	-	-	-	-	-	-	-	-	-	-	-	-
Warwick (Franklin).	477	500	469,188	15 80	Yes.	From Orange northerly through Warwick village to the New Hampshire line, to Winchester, N. H.	9 miles in Mas- sachu- setts.	Doubt- ful.	Doubt- ful.	No.	Yes.	No.	-
Washington (Berkshire).	277	275	299,875	18 50	No.	-	-	-	-	-	-	-	-
Webster (Worcester).	11,509	12,500	- ¹	14 90	Yes.	From the junction of Lake Street and Thompson Road, over the Thompson Road to the Connecti- cut State line.	2 miles.	Un- known.	Un- known.	No.	Yes, in summer.	-	-
Wendell (Franklin).	502	500	-	-	-	-	-	-	-	-	-	-	-
Westborough (Worcester).	5,446	5,446	3,400,116	20 40	No.	-	-	-	-	-	-	-	-

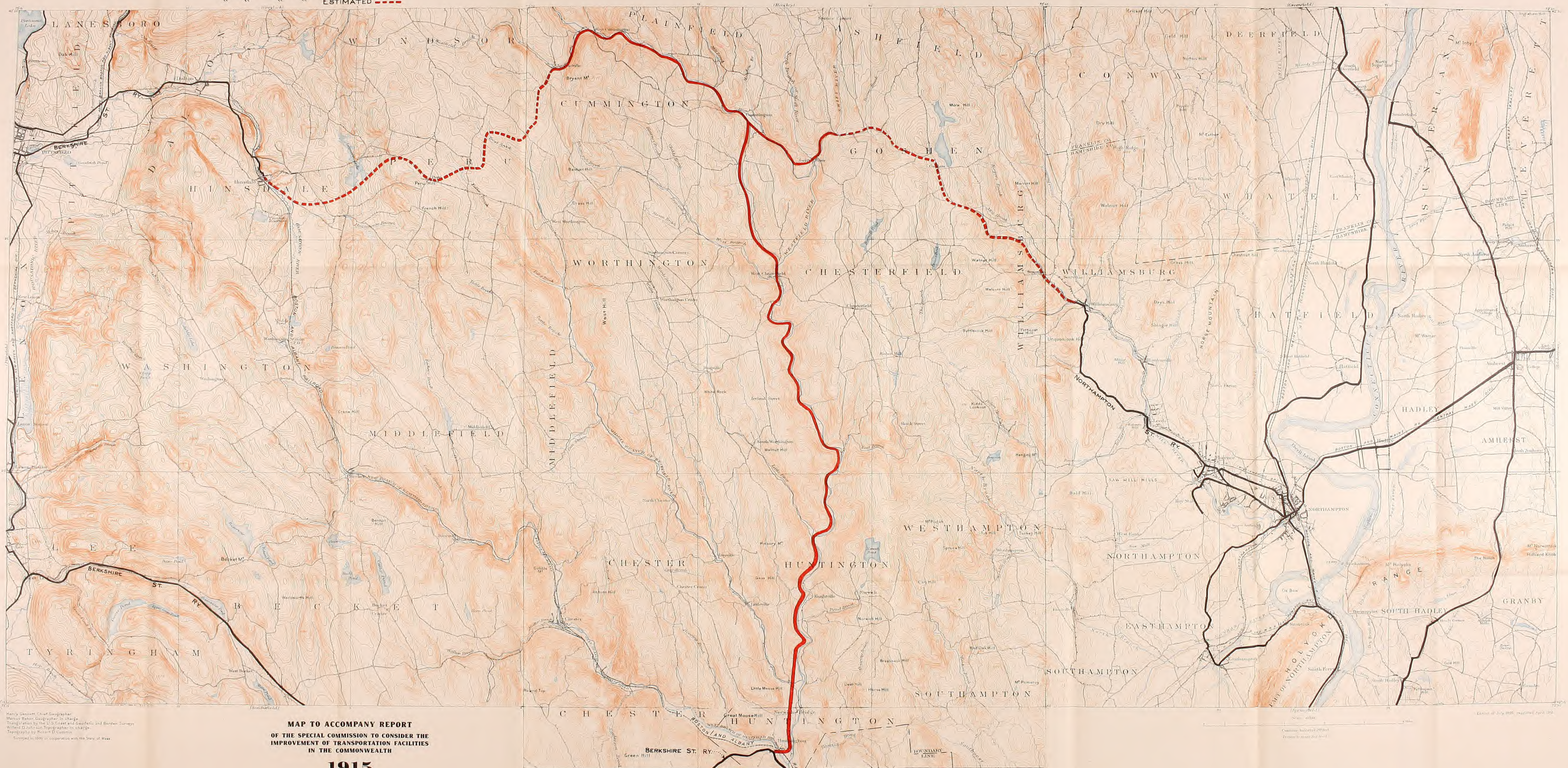
1 \$8,442,391.28.

RECAPITULATION OF QUESTIONNAIRE TO TOWNSHIPS AND CITIES — *Concluded.*

PLACE.	A	B	C	D	E	F	G	H	I	J	K	L	M
	Popu- lation, Census 1910.	Popu- lation (Esti- mated), 1914.	Valu- ation, 1914.	Tax Rate per \$1,000.	Trolley wanted?	Location suggested.	Approx- imate Length.	Fi- nanced in Local- ity?	Can Town assist?	Has Fi- nancing been at- tempted?	Would the Line Pay?	Has Es- timate of Cost ever been made?	By whom, and what Results?
West Boylston (Worcester).	1,270	-	\$994,305	\$14 50	Yes.	From West Boylston village to Oak- dale village, to West Sterling village, to East Princeton village, thence to Westminster, to connect with Fitchburg-Gardner trolley line.	10 miles.	Partly.	No.	No.	Yes, event- ually.	Un- known.	-
West Brookfield (Worcester).	1,327	1,350	-	-	-	-	-	-	-	-	-	-	-
Westfield (Hampden).	16,044	18,075	-	-	-	-	-	-	-	-	-	-	-
Westhampton (Hampshire).	423	-	-	-	-	-	-	-	-	-	-	-	-
Westminster (Worcester).	1,353	1,400	-	-	-	-	-	-	-	-	-	-	-
West Spring- field (Hamp- den).	9,224	10,500	9,688,984	17 00	No.	-	-	-	-	-	-	-	-
West Stock- bridge (Berk- shire).	1,271	1,271	-	-	-	-	-	-	-	-	-	-	-
Whately (Franklin).	846	950	-	-	-	-	-	-	-	-	-	-	-
Wilbraham (Hampden).	2,332	2,332	1,415,869	11 00	Yes.	From end of Wilbraham Road line in Springfield, via Sixteen Acres, to Wilbraham village, thence north to North Wilbraham.	8 miles.	No.	No.	No.	No.	Un- known.	-

Williamsburg (Hampden).	2,132	-	-	-	-	-	-	-	-	-	-	-	-	-
Williamstown (Berkshire).	3,708	3,500	5,116,228	17 30	Yes.	From Williamstown, via the Main Road or the Cold Spring Road, to South Williamstown, thence either (1) to Hancock to connect with New York State electric lines, or (2) Via New Ashford and Lanesborough to Pittsfield.	15 miles.	No.	Doubtful.	Yes.	No, except as feeder.	Yes.	Berkshire Street Railway Company.	
Winchendon (Worcester).	5,678	5,800	4,343,633	22 40	Yes.	From the present terminus of the Northern Massachusetts Street Railway Company on Central Street to the village of Winchendon Springs.	2½ miles.	No.	-	Yes.	Yes.	Yes.	About \$60,000.	
Windsor (Berkshire).	404	-	-	-	-	-	-	-	-	-	-	-	-	
Worcester (Worcester).	145,986	167,000	-	-	-	-	-	-	-	-	-	-	-	
Worthington (Hampshire).	569	570	374,074	20 00	Yes.	From Huntington to Cummington.	20 miles.	No.	Doubtful.	Unknown.	No.	Unknown.	-	

EXISTING TROLLEY LINES —
TROLLEY LINES AS SURVEYED —
" " " " ESTIMATED - - -



MAP TO ACCOMPANY REPORT
OF THE SPECIAL COMMISSION TO CONSIDER THE
IMPROVEMENT OF TRANSPORTATION FACILITIES
IN THE COMMONWEALTH

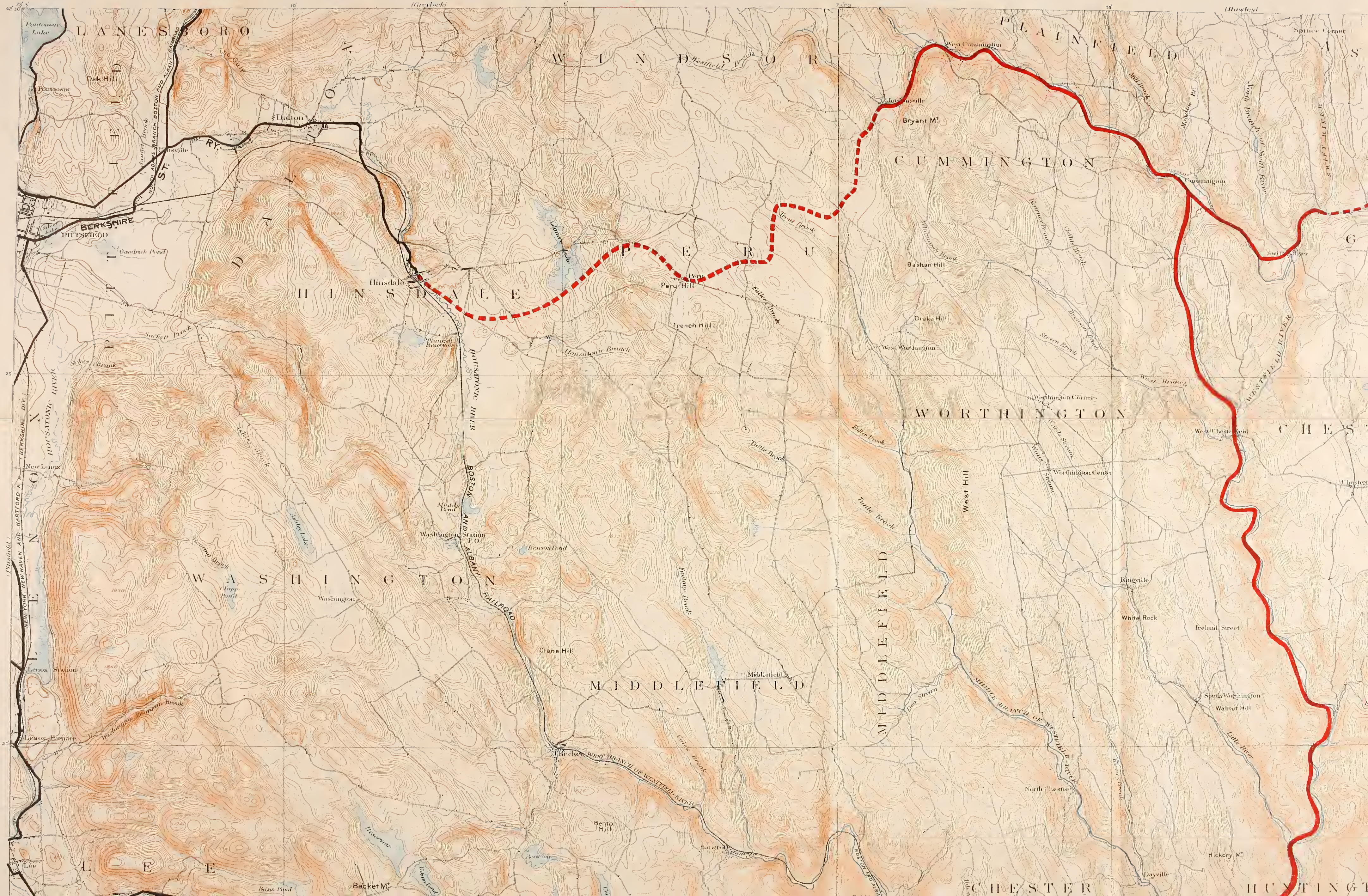
1915

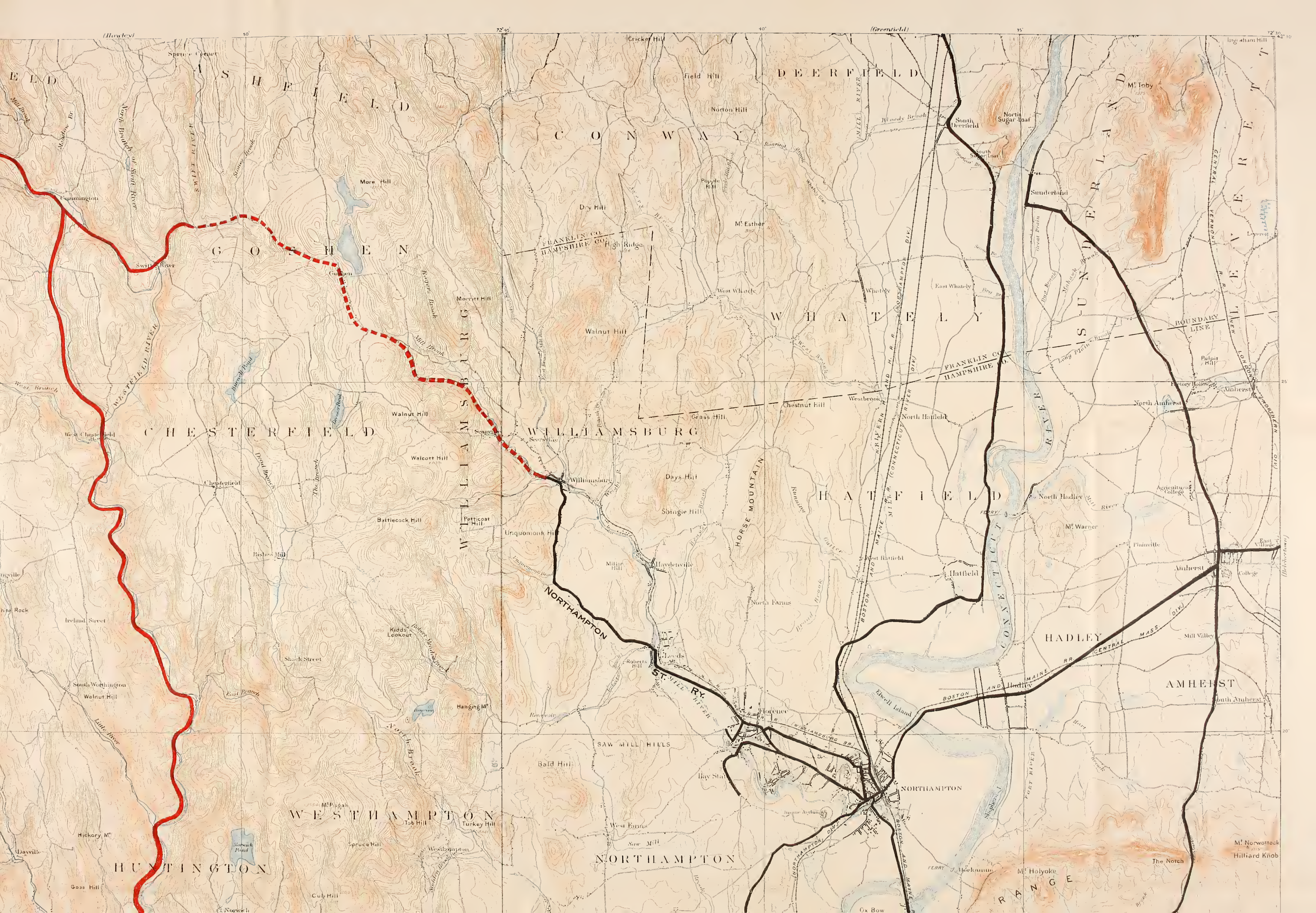
Henry Darnett, Chief Geographer.
Marion Baker, Geographer in charge.
Triangulation by the U.S. Coast and Geodetic and Border Surveys.
William C. Johnson, Topographer in charge.
Topography by Robert G. Connor.
Surveyed in 1890 in cooperation with the State of Mass.

Contour Interval 20 feet.
Datum is mean sea level.

Entered at July 1895, registered April 1912

EXISTING TROLLEY LINES ———
TROLLEY LINES AS SURVEYED ———
" " " " ESTIMATED - - - - -







Henry Gannett, Chief Geographer.
Marcus Baker, Geographer in charge.
Triangulation by the U. S. Coast and Geodetic and Borden Surveys.
Willard D. Johnson, Topographer in charge.
Topography by Robert D. Cummin.

Surveyed in 1886 in cooperation with the State of Mass.

**MAP TO ACCOMPANY REPORT
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IN THE COMMONWEALTH**

1915

